# Profile of the British Columbia High Technology Sector

A joint project of BC Stats and Leading Edge BC

2005 Edition

BRITISH COLUMBIA

Service BC
Ministry of Labour
and Citizens' Services

LeadingEdge BRITISH COLUMBIA

BC STATS

# Profile of the British Columbia High Technology Sector

## 2005 Edition

A joint project of:

BC STATS

and

Leading Edge British Columbia

January 2006

Service BC
Ministry of Labour and
Citizens' Services

http://www.bcstats.gov.bc.ca

http://www.leadingedgebc.ca

This paper was prepared by

Dan Schrier
and
Lillian Hallin

of

BC STATS

**National Library of Canada Cataloguing in Publication Data**
Main entry under title:
Profile of the British Columbia high technology sector. – 2005 ed.-

Annual.
"A joint project of BC Stats, and Leading Edge British Columbia."
Continues: The British Columbia high technology sector, ISSN 1206-9191
ISSN 1488-4216 = Profile of the British Columbia high technology sector

1. High technology industries - British Columbia - Statistics - Periodicals. 2. High technology industries - Economic aspects - British Columbia - Statistics - Periodicals. I. BC Stats. II. Leading Edge British Columbia. III. Title: British Columbia high technology sector. IV. Title: BC high technology sector.

HC79.H53L38 338.4'76213'09711021 C99-960240-3

## LEADING EDGE BC

Leading Edge British Columbia is a not-for-profit marketing and investment attraction organization dedicated to marketing British Columbia's competitive business environment for technology enterprise. Leading Edge British Columbia helps technology businesses by:

- Marketing, branding and promoting British Columbia (B.C.) in six key technology clusters: wireless, new media, biotechnology and life sciences, energy technologies, sustainability technologies, and information and communications technology.
- Raising the profile of B.C. investment and business opportunities globally.
- Locating international investment opportunities and business partnerships.
- Working with multiple partners to assist companies market their products and services.
- Organizing and facilitating joint marketing ventures.
- Leading focused business-to-business missions to maximize networking opportunities.
- Assisting investors, enterprise, site selectors and recruits to identify opportunities in B.C.
- Leading Edge British Columbia was elected to represent the technology industry for the Vancouver-Whistler 2010 Olympic and Paralympic Winter Games. Currently business-to-business activities are being developed to raise the profile of B.C. companies in the lead up to the Games.

For more information call 1-888-683-5322 or visit www.leadingedgebc.ca

## BC STATS

BC STATS is the provincial government's central statistical agency and has the government's largest concentration of statistical products, services and expertise. BC STATS is in the business of providing government with statistical information and analytical services to support informed decision-making and policy development by:

- Measuring the program performance or organization health with the aid of surveys.
- Assisting in the location of hospitals, schools or other infrastructure, by examining the demographics and potential for growth in the client base.
- Supporting succession planning policy initiatives by analysing the employment dynamics within an organization.
- Helping allocate regional program spending by identifying areas of high socio-economic stress.
- Helping to understand and predict future changes to the economic structure of the province by analysing economic activity by industry and sector.
- Supporting economic policy decisions by analysing the impact of investment decisions on provincial and regional economic growth and tax revenues.
- Helping interpret complex data by presenting statistics in simplified graphic or thematic map formats.
- Helping identify regional pressures by gathering and presenting data that follow an organization's service delivery areas.

For more information call the director of BC STATS at 1-250-356-2119 or visit www.bcstats.gov.bc.ca

# Table of Contents

Executive Summary ..... 1

Introduction ..... 5

Profile and Trends ..... 9
- Gross Domestic Product ..... 9
- Employment ..... 12
- Revenue ..... 14
- Wages and Salaries ..... 14
- Establishments ..... 16
- Self-Employment ..... 18
- Commodity Exports ..... 19
- Commodity Imports ..... 25
- United States High Tech Trade ..... 28
- Service Exports ..... 28

BC's High Technology Industry in Context ..... 31

Detailed Tables ..... 37

Appendix A: Defining the High Technology Sector ..... 63

Appendix B: Defining High Technology Commodities ..... 71

# Executive Summary

High technology, by its very nature, is constantly changing and, as such, is difficult to define. Nevertheless, the critical role that high technology plays in the economy and in society in general makes it a vital area of study and it is essential to develop methods of measuring the economic contribution of the high tech sector. With this edition of the *Profile* report, the definition of the sector has been expanded to reflect the changing nature of the concept of high technology.[1] Service sector industries such as telecommunications and motion picture production have been added in consideration of the expanded role of technology in those industries. With this broader definition of high technology, it is clearer than ever before that the sector is an important part of British Columbia's economy.

## BC's high technology sector showed improvement in 2004

In 2004, BC's high tech sector recorded above average growth in every indicator with the exception of employment, where it suffered the most significant job loss in the country. It ranked second in the country in expansion of gross domestic product (GDP) and value of international commodity exports and experienced the strongest improvement in revenues and average earnings.

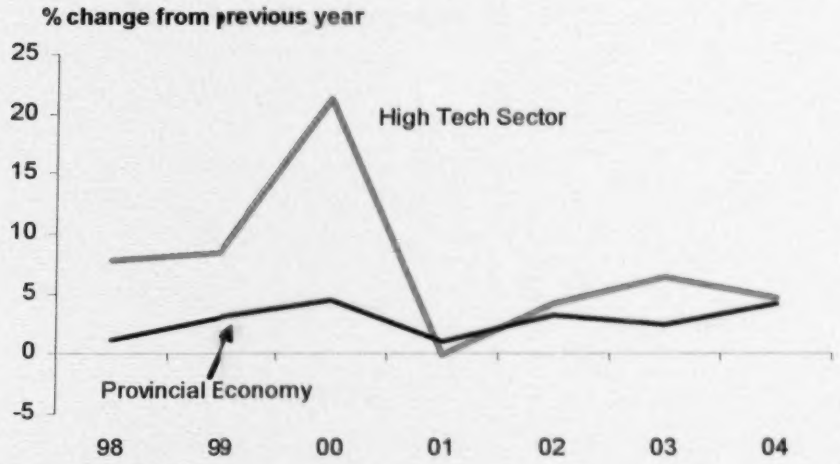
BC's high technology sector continued to expand in 2004, with high tech GDP rising 4.6% from the level achieved in 2003, to over $8.3 billion (1997 constant dollars). GDP in the service sector continued to climb, increasing 4.2% from the value posted in 2003. The high technology manufacturing sector also recorded strong growth, with GDP climbing 6.6% in 2004.

With the exception of 2001, when the slump in the manufacturing sector offset the gains in high tech services, resulting in a small decline in GDP (-0.1%), British Columbia's high technology sector has outpaced the overall economy in terms of GDP growth over the last several years. The high tech sector accounted for approximately 5.3% of British Columbia's overall economic growth in 2004.

---

[1] Note that the new definition has been applied to the entire time series and that all trend analysis is conducted using this revised data. Also, data for other provinces have also been revised using the new high technology definition, such that all provincial comparisons use a consistent definition. Data on trade of goods have not been affected by the definitional change since these data are not measured using an industry-based definition, but rather are aggregated using commodity-based codes. However, trade in services has been revised to incorporate an expanded definition of high tech services. See Appendix A for details on the industry-based definition of the high technology sector and Appendix B for an explanation of the commodity-based definition used to measure high tech merchandise trade.

**British Columbia's high technology sector GDP continues to outpace the overall provincial economy**




Despite the growth in GDP, employment in the high technology sector in BC fell 2.4% in 2004. Both the service (-1.7%) and manufacturing (-5.1%) sectors contributed to the drop in employment. Total high technology employment in British Columbia fell to 64,660 in 2004, with high tech services responsible for four-fifths of this figure. Increased output coupled with reduced employment levels indicates that productivity improved in the high tech sector in 2004.

Similar to GDP, high technology revenues in British Columbia continued to climb, rising 6.8% to just shy of $14 billion. Both service (+7.4%) and manufacturing (+4.1%) industries contributed to the overall increase in high tech revenue.

On the expense side, wages and salaries paid by BC high tech industries reached $3.6 billion in 2004, edging up 0.3% over the previous year despite falling employment. At $1,070, average weekly earnings in the high tech sector significantly exceed the overall BC average weekly wage rate of $690.

### There were more high tech establishments in BC in 2004

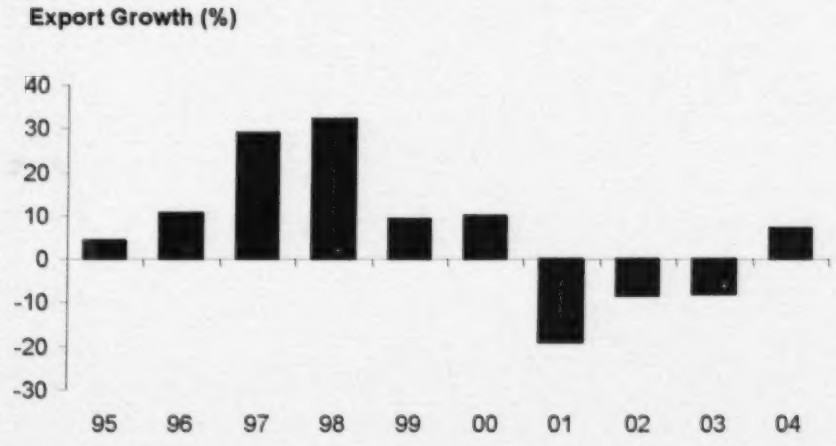
The regional distribution of high technology businesses tends to reflect the population distribution of the province with more establishments in areas with higher population. In total, there were 8,288 establishments with paid employees in the high tech sector in 2004. This represents a marginal 0.8% increase over the previous year. About 90% of these establishments were in the service sector. There were an additional 13,522 establishments with no employee payroll (which can be seen as a proxy for the number of self-employed

people with no paid help) in the high technology sector, bringing the total number of high tech establishments to 21,810 in 2004. Once again, most of these self-employed people worked in the service sector. Although establishments in the service sector heavily outnumber those in manufacturing industries, they tend to have fewer employees.

## Exports and imports of high tech goods rebounded in 2004

International trade is an important aspect of the high technology sector, as reflected in the high volume of two-way trade. After three consecutive years of decline, the value of high technology commodity exports from British Columbia climbed 7.1% in 2004. This is a significant turnaround after exports fell by more than eight percent in each of the previous three years, including a 19.0% drop in 2001.

**BC high tech exports rebounded in 2004**




Imports of high technology goods into BC also went up in 2004, rising 4.9%. Even though exports increased at a more rapid pace compared to imports, the absolute increase in imports was larger, shifting the high tech trade balance further into deficit. BC's high tech trade deficit increased to just under $2.8 billion in 2004.

The largest category of high tech commodity exports is computers and telecommunications, followed by life sciences products, which are mainly comprised of medical equipment. These are also the top imported high tech goods. The United States is by far the most significant destination for BC high tech commodity exports with 74.5% of the goods shipped there. By comparison, only 9.4% of BC's high tech goods are shipped to the European Union and 9.3% to Pacific Rim countries. The United States is also the top origin of imports of

high tech goods into BC, but the distribution is much less concentrated as only 43.4% of high tech imports come from the United States, while the European Union is the origin of another 12.1% and the Pacific Rim ships 32.7% of the high tech goods destined for BC.

As important as trade in goods is to BC's high tech sector, it is still small compared to trade in services. Provincial-level detail on exports of services is not widely available, but roughly-speaking, high tech service exports from BC are approximately three times the value of international shipments of high tech goods.

### BC ranks third in the country in high technology GDP

Compared with the rest of Canada, British Columbia's high technology sector ranked third in terms of GDP in 2004; however, it was fourth behind Ontario, Quebec and Alberta in terms of revenue generated by the sector and value of international exports. The drop in employment concurrent with a rise in high tech employment in Alberta also pushed BC into fourth place as a source of high tech jobs.

Nevertheless, British Columbia's high technology sector has undergone significant growth in the last decade and is likely to emerge as an even more important segment of the provincial economy in the years to come. The increasing penetration of high technology into all facets of life, including the adoption of high technology procedures and equipment in many "traditional" industries, such as forestry, mining and agriculture, should ensure that this sector will continue to expand and British Columbia's presence in the sector should continue to grow as well.

# Introduction

## The BC high technology sector

Technological advancements in the last two hundred years, or even the last couple of decades, have dramatically altered our economic and social landscape. As such, the role of technology in the economy is clearly a vital area of study. The *Profile of the High Technology Sector* is part of an ongoing project to monitor the growth and evolution of the high technology sector in British Columbia by evaluating the economic contribution of firms in the province that produce high technology goods and services. The key indicators examined include gross domestic product, revenue, employment, wages and salaries, establishment counts and international trade.

The designation of a high technology sector among the other industrial sectors of the economy provides a very useful analytic tool. This is based on the premise that high technology firms behave in a way that allows them to be understood as a group, and that programs or policies can be tailored to their needs.

## Defining high technology

High technology is usually associated with growth and development. Since research and development (R&D) is the basis for technological advancement, those industries that perform a significant amount of R&D often have a considerable high tech component. However, an industry does not necessarily need to have a high degree of R&D involvement to be considered high tech. Industries that produce goods or services that are uniformly recognized as high tech are also included in the high technology sector. The concept of the high technology sector used in this report is basically product-based; therefore, some manufacturers that employ advanced processes are not included. In other words, just because a good is produced using advanced processes does not automatically make it a high tech product. For example, a mushroom produced in a high tech greenhouse is still just a mushroom.

**High technology is described using two different definitions – one that is industry-based and another that is commodity-based**

High technology, by its very nature, is constantly changing and, as such, is difficult to define. Nevertheless, there are many different definitions of high technology in use around the world. The *Profile* report uses two different definitions—one that is industry-based and another that is commodity-based—to measure, respectively, high tech's contribution to the British Columbia economy and the volume of international trade in high technology goods.

Due to the continuous evolution of the concept of high technology, the definitions used to describe the sector also need to change from time to time. Taking this into account, with this edition of the *Profile* report, BC STATS has expanded its definition of what industries constitute the high technology sector.[2]

Since the inception of the *Profile* reports in 1996, statistics on the high technology sector have been built up using information from industries within the sector. A more accurate approach would be to identify the firms felt to comprise the sector, then conduct surveys to obtain the information needed to conduct the desired analyses; however, the cost of such an approach would be substantial. Data by standard industries defined under the North American Industry Classification System (NAICS)[3] is largely available from Statistics Canada, which makes an industry-based approach not only significantly less costly, but also offers consistency with other Statistics Canada data, as well as comparative data for other provinces and a reasonable degree of accuracy.

It should be noted that the high technology definition used by BC STATS is a British Columbia-focused classification and that some high technology industries that are not present in British Columbia, but may be prevalent elsewhere, may be excluded from the data presented in this report. Conversely, some industries that have a substantial high tech component in British Columbia and are therefore included in the high technology sector may be mainly low tech in other regions. For example, British Columbia has a significant fuel cell cluster, including the company Ballard Power Systems, which is considered a world leader in the design and production of fuel cells. The fuel cell industry is included in the NAICS classification 335990 (all other electrical equipment and component manufacturing), which is generally not considered a high technology industry, but with the fuel cell cluster in BC it makes sense to include it in the high tech sector.

**BC Stats definition of high technology is British Columbia-focused**

[2] Industries to be added to the definition were determined in consultation with Leading Edge BC through a review of literature pertaining to high technology definitions in use elsewhere. The two main papers referenced were:

Platzer, M., Novak, C.A. and Kazmierczak, M.F. (February 2003). *Defining the High-Tech Industry*. American Electronics Association.

E. Wayne Clendenning & Associates (May 2000). *Comparison and Reconciliation of SIC and NAICS Industry Codes Used to Define Knowledge-Based Industries (KBIs)*. Industry Canada.

[3] NAICS is a system of classifying industries developed in cooperation between Statistics Canada, the United States Office of Management and Budget and the Instituto Nacional de Estadística, Geografía e Informática of Mexico.

The industry-based definition includes pharmaceutical and other chemical manufacturers, computer and other electronic industries, the aerospace sector, producers of medical equipment and supplies, and providers of information, engineering and computer services. New service industries incorporated into the high technology definition starting with this edition of the *Profile* include motion picture and video production, surveying and mapping, scientific and technical consulting, telecommunications, and research and development. The addition of these new industries has expanded the scope of the sector substantially. For example, the output produced by BC's high technology sector, as measured by GDP, is double what it was under the old high tech definition, largely due to the inclusion of telecommunications industries. It should be noted that this is the first attempt at measuring the indicators for this broader definition of high technology and, as such, data in future editions of this report could be revised as the methodology is refined.

For more discussion on the industry-based definition, including a complete listing of the industries included in BC STATS' high technology definition, see Appendix A, "Defining the High Technology Sector."

While an industry-based definition makes sense when examining high technology GDP or employment, it is not really appropriate for looking at trends in high tech commodity exports and imports. For this purpose, a second, commodity-based, definition was developed. This definition was constructed using harmonized system codes, which are the commodity classification codes used in Canadian customs documents. The list of commodities to be classified as high technology was based on the US Bureau of the Census' advanced technology products (ATP) list, which has been established for quite some time and is a recognized definition of high technology goods. Since Canadian and American commodity codes are identical only at the six-digit level and Canadian export codes are eight digits and import codes are ten digits, it was necessary to do some conversion. As a result, the final definition may not be completely identical to that used in the United States; however, it should be reasonably similar such that broad comparisons can be made.

For more detail on the commodity-based definition and a brief description of the ATP categories, see Appendix B, "Defining High Technology Commodities."

### New to this year's edition

As mentioned above, the industry-based definition of high technology has been expanded to include more service industries. The

complete list of industries included in the high tech sector is available in Appendix A, as well as a brief description of each industry.

This report includes the latest information available as of November 2005. All data in this paper refer to the calendar year 2004. It should be noted that the data included in these annual reports contain revisions, such that data for previous years that have been published in earlier reports may be different from those contained in this report. With the inclusion of more service industries in the high tech definition, it is clear that the revised historical figures for high tech services and the high tech sector overall will be higher than reported in the past.

Readers should note that graphs and text in this publication deal only with the highlights of the information that has been collected. The data tables in the final sections contain additional detail that can prove valuable.

### Input Indicators of the BC High Technology Sector

This *Profile* report provides a basic overview of the outputs of the high technology sector in British Columbia; however, it is also useful to look at the inputs to the high technology sector. To this end, BC STATS produces a companion report: *Input Indicators of the BC High Technology Sector*. The high technology sector and the infrastructure network that surrounds it is a complex system with many players and interactions. The *Indicators* report provides measures of the inputs to the high technology sector and the overall climate of innovation. It covers a variety of activities with respect to high technology in the educational, business, government, external and labour sectors for the years as far back as 1993. Whenever possible, the indicators are presented in comparison to other provinces, which serve as benchmarks for the situation in British Columbia.

# Profile and Trends

High technology in British Columbia has been a tale of two different sectors in recent years. While high tech **service** industries have progressed steadily, seemingly unaffected by the turmoil caused by the problems surrounding dotcoms and other economic crises, the **manufacturing** sector has floundered, slumping badly in 2001 and 2002. In 2003, BC's high tech manufacturing sector started to turn toward recovery and this rebound continued in 2004 as output, revenues and trade in goods all increased relative to the previous year.

**BC's high tech goods sector has rebounded after suffering a severe downturn**

Throughout this report, there are two types of industries examined: **service** and **manufacturing** industries. High tech service industries—computer design, engineering, telecommunications, film and video production and information services—do not make a tangible good. Instead they provide expertise, such as software creation, information technology system management, the planning and design of a bridge, or the analysis of a blood sample for medical diagnosis. Manufacturing industries are those that take raw materials, or the products made by other manufacturing industries, and make new products. High technology firms include those involved in manufacturing of aircraft, computer and related products and pharmaceutical goods, just to name a few. While companies often engage in a variety of activities that may include both a manufacturing and a service component, they are classified as either a goods or service-producing industry based on the activity that is their main source of revenue.

## High tech sector GDP continued to expand in 2004

High technology **gross domestic product (GDP)** experienced robust growth of 4.6% from 2003 to 2004, climbing to over $8.3 billion.[4] GDP in the service sector continued to expand, rising 4.2% from the value posted in 2003. The high tech manufacturing sector also recorded strong growth, with GDP climbing 6.6% in 2004. This is the second straight year that there has been a significant increase in high tech manufacturing GDP, indicating the sector is back on the right track after suffering double-digit declines in both 2001 and 2002.

**BC high tech GDP climbed 4.6% in 2004 to over $8.3 billion**

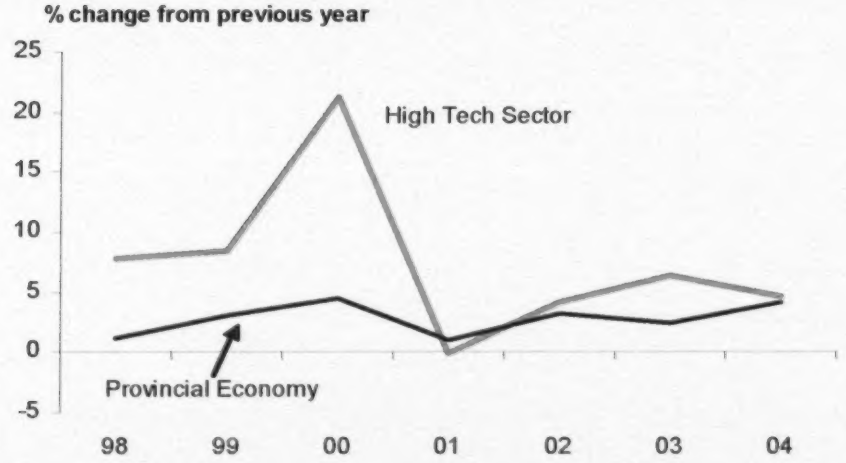
**Gross domestic product (GDP)** is a measure of value added, which is essentially the difference between the cost of the material inputs and purchased services used in production and the price at which a good or service is sold. GDP can be reported using either current or constant dollars. Constant dollar, or real, GDP is the best measure for understanding and illustrating trends over time. Constant dollar figures have been adjusted to remove the effect of price changes (i.e., inflation and deflation) over time. This means that constant dollar values can be viewed as measures of the actual value added, or net output, of an industry.

[4] All GDP figures quoted in this paper are in 1997 constant dollars unless otherwise stated.

With the exception of 2001, when the slump in the manufacturing sector offset the gains in high tech services, resulting in a small decline in GDP (-0.1%), British Columbia's high technology sector has outpaced the overall economy in terms of GDP growth over the last several years. However, the rapid pace of expansion in the late 1990s has since moderated and the change in high tech GDP in 2004 (+4.6%) was only marginally higher than that of the provincial economy as a whole measured on an industry basis (+4.1%).

**Figure 1**

**Over the last several years, high tech GDP growth has generally outperformed the BC economy**




The inclusion of more service sector industries in the definition of the high technology sector starting with this edition of the *Profile* report has resulted in doubling the recorded output of the sector. As a result, high technology as now defined is regarded as a far more significant economic sector for the province compared to its status under the previous definition. In 2004, high technology industries generated about 5.3% of British Columbia's GDP, which is similar in size to industries such as education services and construction.[5] The financial, insurance and real estate and leasing sector (including owner-occupied dwellings) generates the greatest contribution, at approximately 22% of GDP.

**High tech comprises about 5.3 percent of British Columbia's GDP**

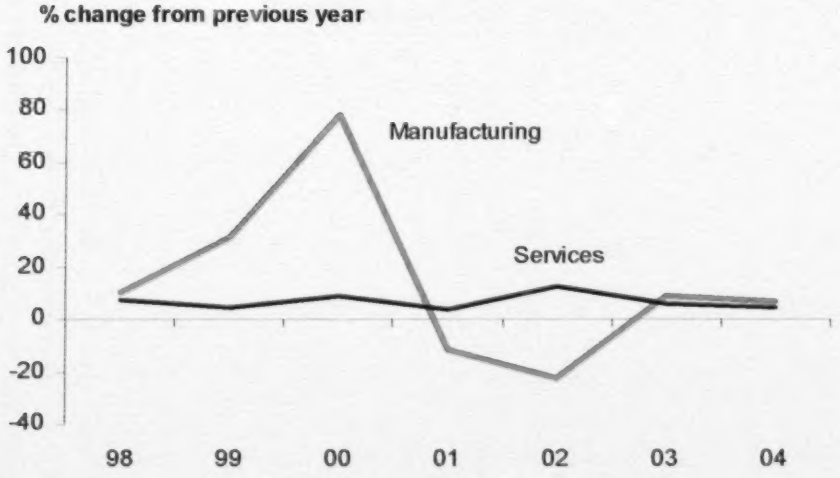
[5] This percentage is calculated using current dollar GDP estimates, since the constant dollar value of the BC industrial aggregate is chained and chained data is not additive, therefore the percentage could not be properly calculated.

## Services constitute the bulk of high tech GDP in BC

Services make up the large majority of British Columbia's high tech output. In 2004, almost 82%, or $6.8 billion of BC's high tech GDP was comprised of services. By comparison, high technology goods generated just over $1.5 billion in GDP. Whereas high tech manufacturing GDP experienced two straight years of double-digit declines in 2001 and 2002, GDP for high tech services has climbed steadily, posting growth of over four percent in each year since at least 1997. The expansion in the services sector has helped offset the declines in manufacturing.

**Growth in GDP for high tech services has helped offset declines in high tech manufacturing**

**Figure 2**




With the exception of 2001, high technology in British Columbia has performed quite well over the last decade compared to other standard industries, ranking as one of the fastest growing sectors in the provincial economy.

**BC GDP, 2004**
**(constant 1997 dollars)**

| | $million | % change |
|---|---|---|
| Manufacturing | 1,521 | 6.6 |
| Services | 6,833 | 4.2 |
| **High Tech Total** | **8,354** | **4.6** |
| **BC Total** | **126,857** | **4.1** |

## High tech employment slipped in 2004

**High tech employment in BC dropped 2.4% to 64,660 in 2004**

After climbing 1.3% in 2003, employment[6] in the high tech sector in BC fell 2.4% in 2004. Both the service (-1.7%) and manufacturing (-5.1%) sectors contributed to the drop in employment. This is in contrast to overall employment in the province, which climbed 2.1%. Total high technology employment in British Columbia fell to 64,660 in 2004, with high tech services responsible for four-fifths of this figure.

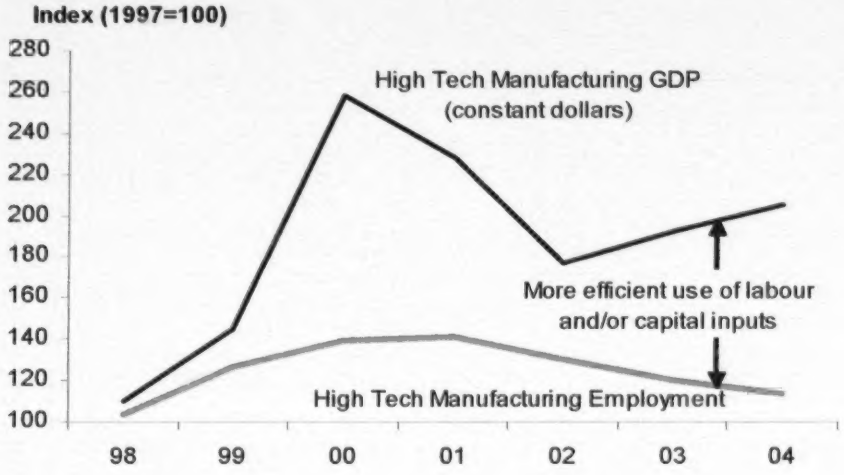
The climb in GDP accompanied by a drop in employment indicates that BC's high technology sector has achieved productivity gains. This is true of both services and manufacturing, but the manufacturing sector has shown the most significant productivity improvement over the last decade. Real high tech manufacturing GDP has doubled since 1997, while employment in the sector has climbed at a much slower pace, increasing by only 14% in the same period. Productivity slumped in 2001 and 2002 when the high tech bubble burst and manufacturing GDP took a nosedive, but employment did not experience matching reductions. However, the last two years have seen a return to productivity improvements in BC's high tech manufacturing, as in both years GDP has grown while employment has fallen.

[6] The measure of employment used in this report is based on Statistics Canada's Survey of Employment, Payroll and Hours (SEPH). This employer survey provides a wealth of detail about employment, wages and hours in a large number of industries. However, because it is an employer survey, the SEPH data does not include self-employed workers and workers in commercial fishing, agriculture and some services.

The data from SEPH give an average number of workers in an industry through the course of the year. If an industry is highly seasonal, the peak number of workers is offset by those months where there are fewer workers. A full-time worker is accorded equal status with a part-time worker. No attempt is made to measure the number of "person years" or "full-time equivalents."

**Productivity in high tech manufacturing is improving again**

**Figure 3**




Productivity in the high tech service sector also dropped off in 2001, but output per worker in BC's high tech services has been growing in each of the last three years.

**BC Employment, 2004**

| | Workers | % change |
|---|---|---|
| Manufacturing | 12,270 | -5.1 |
| Services | 52,390 | -1.7 |
| **High Tech Total** | **64,660** | **-2.4** |
| **BC Total** | **1,670,530** | **2.1** |

BC's high technology sector employed approximately 3.9% of the province's work force in 2004, down somewhat from the 4.3% peak achieved in 2001. The 64,660 people working in high technology industries in BC in 2004 exceeded the total number of British Columbians working in the forest sector, which includes logging, silviculture and wood and paper manufacturing industries (approximately 56,700 employees).

**In BC, more people work in high tech than in the forest sector**

Approximately four out of every five workers in BC's high tech sector work in a service industry. Computer and related services and telecommunications are the largest employers in the high tech service sector. Telecommunications industries in BC have shed over 2,000 jobs since 1997, including 630 between 2003 and 2004. BC's motion picture production and post production industries saw the largest percentage drop in employment in 2004, losing 12.8% of its jobs, a drop of 440. Computer and related services was the only industry group within the high tech sector to see an increase in employment in 2004, with a net job gain of 1.7%.

## High technology revenue continued to grow in 2004

High technology **revenues** in British Columbia continued to climb, rising 6.8% to just shy of $14 billion. This was the third straight year of growth in high tech revenues in the province. Receipts from both service and manufacturing industries contributed to the overall increase in high tech revenue. High tech services recorded a 7.4% boost in revenue, while high tech manufacturing receipts expanded 4.1%.

**High tech revenue in BC climbed 6.8% to $14 billion in 2004**

**Revenue** is the amount of money earned from the sale of goods or services by producers in an industry. It is a measure of the monetary value of an industry's goods and services, and in the manufacturing sector, is measured through the value of shipments. Revenue includes the cost of the inputs necessary to make the goods or services, while GDP is the amount remaining after all costs (except labour costs) have been paid.

The fastest growth in revenues occurred in the "other services" industries, which includes surveying and mapping, environmental and technical consulting, and research and development. Revenues in this industry group soared 37.5% from 2003 to 2004. Computer and related services (+5.5%) and telecommunications (+4.6%), the largest industry groups in BC's high tech sector, also experienced significant revenue growth.

**"Other services" recorded the fastest growth in revenues**

## High tech wages and salaries continued to climb in 2004

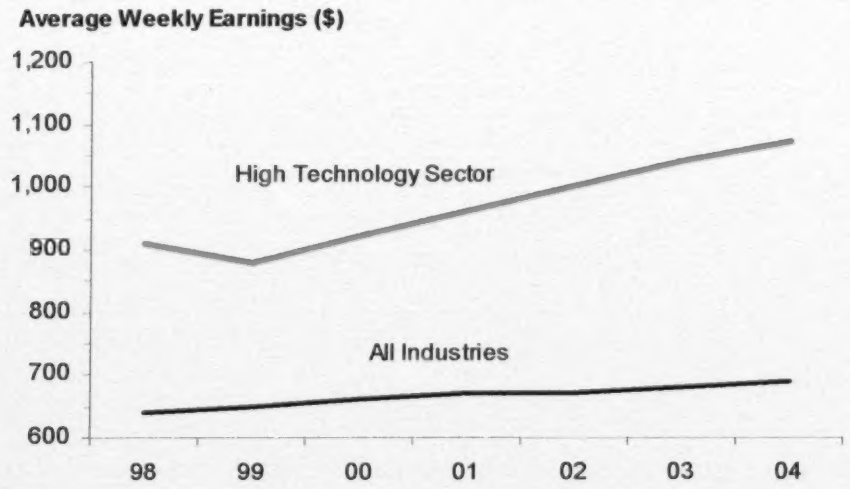
Wages and salaries[7] in the high technology sector in British Columbia edged up 0.3% from the pay doled out in 2003. This is well below the rate of growth of wages and salaries in the province as a whole (+4.0%) and is due at least in part to falling employment in the high tech sector combined with employment growth for the overall economy. Wages and salaries in the manufacturing sector fell 2.5%, while services experienced a 0.9% increase. Computer and related services industries, which were the only high tech industry group to record employment growth, also experienced the strongest rise in high tech wages and salaries (+4.7%). Engineering services also saw marginal growth in wages and salaries (+0.1%), while telecommunications (-3.2%) and "other services" (-6.8%) posted the largest declines.

[7] Wages and salaries are based on the earnings of all workers in an industry who are on the payroll, from working owners and senior executives to junior support staff. While overtime and bonus pay are included, other benefits such as medical plans, stock options and time off in lieu of overtime are not. Like the employment values described earlier in this report, the wages and salaries data are calculated using source data from Statistics Canada's Survey of Employment, Payroll and Hours.

Average weekly earnings in high technology industries increased 2.7% in 2004, compared to only 1.9% for the BC industrial aggregate. Workers in high technology occupations earned an average of $1,070 per week, compared to only $690 for employees in all industries as a whole. The higher wages were earned mainly by those working in high technology service industries, where the average weekly wage was $1,070, compared to only $660 in the service sector overall. On the other hand, employees in high tech goods industries also earned more per week ($1,060) compared to the overall average for workers in British Columbia's goods industries ($870). The wage disparity in high tech is likely due to a combination of greater skill requirements relative to many jobs, as well as a strong demand for skilled high technology workers, therefore requiring greater pay to both attract and retain them.

**Average weekly earnings are far higher in high tech industries**

**Wages in high technology industries are far higher than the average for all industries in the province** **Figure 4**




However, reduced demand for high tech workers following the bursting of the high tech bubble in 2001 did not result in a corresponding drop in average weekly earnings. In high tech manufacturing, in particular, significant declines in employment were coupled with robust growth in average earnings. According to a Statistics Canada study,[8] the occupations that were hardest hit by layoffs in the high tech sector were those with lower skill requirements, such as assemblers of high tech manufactured goods and clerical

[8] Bowlby, Geoff. (Winter 2003). High-tech—two years after the boom. *Perspectives, Statistics Canada catalogue no. 75-001-XPE*, 27-30.

staff. As a result, there has been a shift in the composition of high tech employment toward a higher share of skilled workers, which, since these workers get paid more than those with less skills, has driven up the average earnings for the high tech sector overall.

## The number of high tech establishments increased in 2004

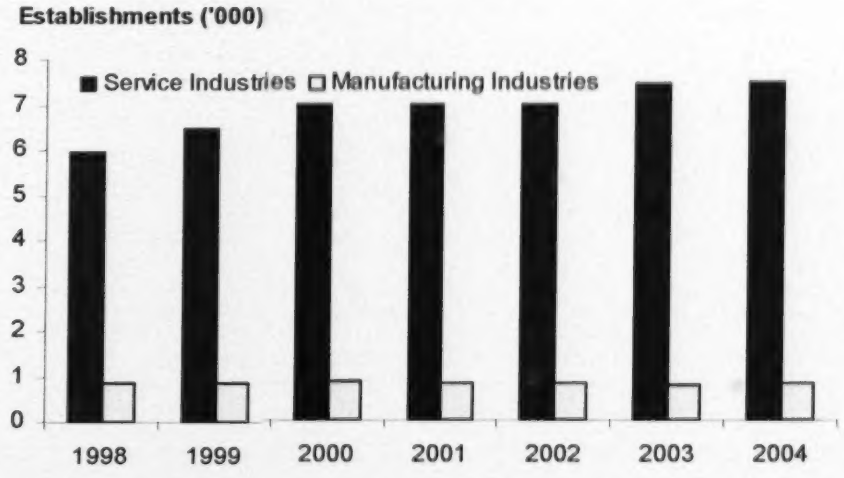
The number of high technology **establishments** in BC edged up 0.8% in 2004, the same rate of growth experienced a year earlier. Excluding those establishments with no employees, there were 8,288 high tech establishments in the province. Approximately 90% or 7,499 of these were in service industries, with the remaining 789 in manufacturing industries. The number of high tech establishments in both services and manufacturing climbed by 0.8% between 2003 and 2004. For the high tech manufacturing sector, it was the first increase in the number of establishments since 1999.

**Service industries dominate the count of high technology establishments**

An **establishment** is the smallest accounting unit within a firm that can report certain financial data. A single company may contain a number of establishments. A branch location does not always signify the existence of an establishment; for example, bank branches are not identified as individual establishments. Furthermore, to be included in the tabulations, the establishment must have paid employees; owner-operated firms with no paid employees are not included.

**Figure 5**

**Approximately 90% of high tech establishments are in service industries**




In the high tech service sector, there was strong growth in the number of businesses in "other services" industries (+4.5%) and

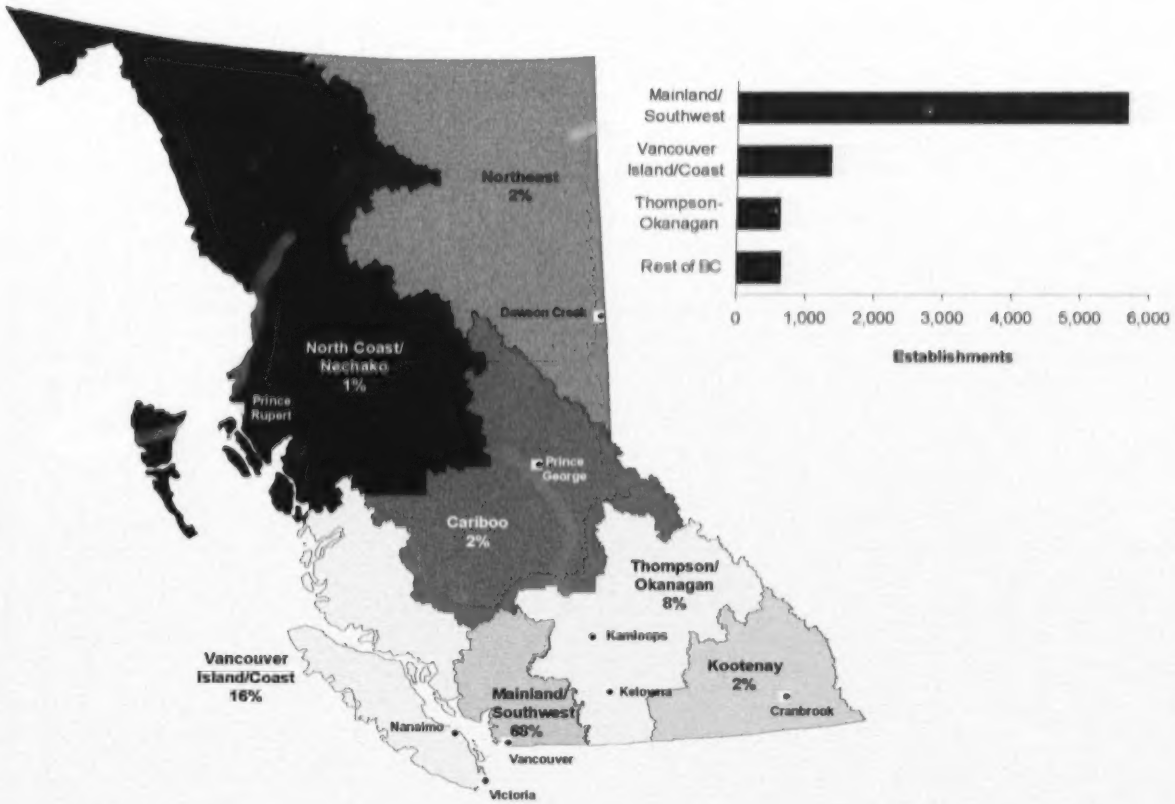
also in motion picture production and post production industries (+2.1%). However, telecommunications (-6.8%) and computer and related services industries (-0.6%) shed a significant number of establishments and there were also a couple fewer engineering businesses in 2004. For both the computer and related services and engineering industries, there were large gains in the number of self-employed working in the industry, which may indicate that many of the employees of those businesses that shut down or moved away went to work for themselves.

## High tech establishments are located where the people are

As one would expect, high technology establishments tend to be located in the most populous areas of the province. In 2004, over two-thirds (68%) of high technology establishments in British Columbia were located in the Mainland/Southwest Development Region (which includes Greater Vancouver). Most of the remaining high tech businesses were situated in either Vancouver Island/Coast (16%) or Thompson-Okanagan (8%).

**Over two-thirds of high tech establishments are in the Mainland/Southwest, 2004**

**Figure 6**



Three regions of the province experienced growth in the number of high tech establishments between 2003 and 2004, with most of the growth occurring in the service sector. Northeast led the way with a growth rate of 3.5%, followed by Vancouver Island/Coast (+1.1%) and Mainland/Southwest (+0.9%). Kootenay saw no change in the total number of high tech establishments as a slight drop in manufacturing enterprises was offset by an identical rise in service businesses. The other four regions of the province recorded a decline in the number of high tech establishments.

The concentration of high tech businesses in the Lower Mainland has intensified over the last five years. The Mainland/Southwest region increased its share of British Columbia's high tech businesses with employees from 66.9% in 1999 to 68.3% in 2004 with most of the growth occurring in Greater Vancouver, where over 700 new high tech businesses were established during that period.

## High tech manufacturing industries employ more people

Although establishments in the service sector heavily outnumber those in manufacturing industries, they tend to have fewer employees. Of businesses with employees, almost 11% of high tech manufacturers employed more than 50 workers, compared to less than 4% of high tech service industries. While just over half (53%) of high tech manufacturing industries (excluding self-employed with no paid help) have less than five employees, over two thirds (69%) of the establishments in the service sector fit this description.

## Self-employment[9] in the high tech sector

Some of the high technology industries, particularly computer and engineering services, are ideally suited to self-employment, where the skills, knowledge and energy of the individual are more important than large capital investment. The data confirms this, as 62% of the businesses that were deemed to be high technology had no paid employees in 2004. Businesses in the service industries are far more likely to be comprised of self-employed

**Self-employment is widespread in the high technology sector**

[9] There is currently no perfect measure of self-employment in the high tech sector available. The figures quoted here are based on a tabulation of the number of establishments with no employee payroll. This approximates the number of self-employed with no employees (those with employees will be counted in the number of establishments discussed earlier). This is only an approximation because the figure may also include companies that hire only contractors, or companies with unpaid family workers. Also, small unincorporated businesses with annual sales of less than $30,000 are not captured. *Note that it would be erroneous to add these establishment counts to the total number of high technology workers reported elsewhere in this report due to the differences in what they are measuring.*

individuals with no employees than those in manufacturing. In 2004, 63% of all high tech service establishments had no employees, compared to only 40% of high tech manufacturing businesses.

**Establishments, 2004**

| | Without Employees | With Employees |
|---|---|---|
| Manufacturing | 535 | 789 |
| Services | 12,987 | 7,499 |
| **High Tech Total** | **13,522** | **8,288** |
| **BC Total** | **187,895** | **158,421** |

The high tech sector has a significantly higher proportion of businesses without employees compared to the rest of the economy. The proportion of all businesses in the province that had no employees in 2004 was only 54%.

## Trade is of vital importance to BC's high technology industry

International trade is an important aspect of the high technology sector, as reflected in the high volume of two-way trade. The domestic market for high technology goods does not have sufficient volume to achieve the economies of scale needed to remain competitive. Therefore, access to international markets is extremely important as it allows BC producers of high tech goods to focus on market niches. At the same time, BC manufacturers do not produce enough of some types of high technology equipment to satisfy the domestic demand from either consumers or the high technology industry itself, and as a result, large volumes of goods are imported into the province.[10]

## High tech exports rebound in 2004

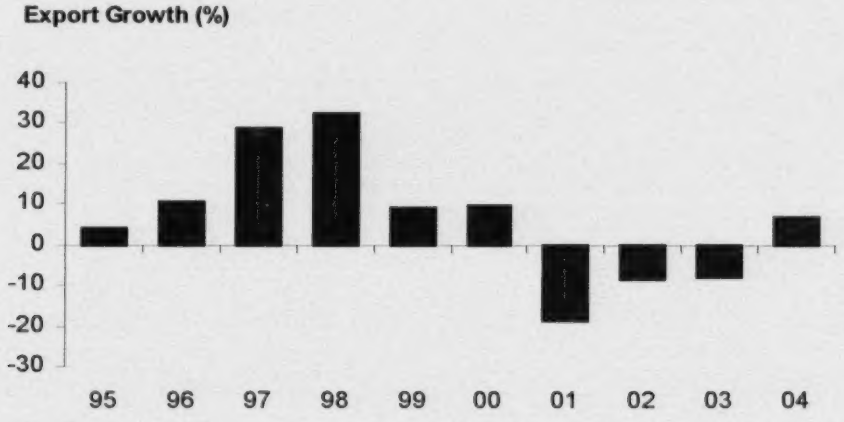
After three consecutive years of decline, the value of high technology commodity exports from British Columbia climbed 7.1% in 2004. Although this increase was not as robust as the 10.1% growth in the value of overall exports from the province, it is a significant turnaround after exports fell by more than eight percent in each of the previous three years, including a 19.0% drop in 2001.

**BC origin high tech exports rebounded in 2004, growing 7.1%**

[10] High technology goods referred to in this document are based on a list developed by the US Bureau of the Census and modified to fit Canadian conditions. See Appendix B, "Defining High Technology Commodities" for more information.

**Figure 7**

**After three years of declining fortunes, BC's high tech exports turned around in 2004**

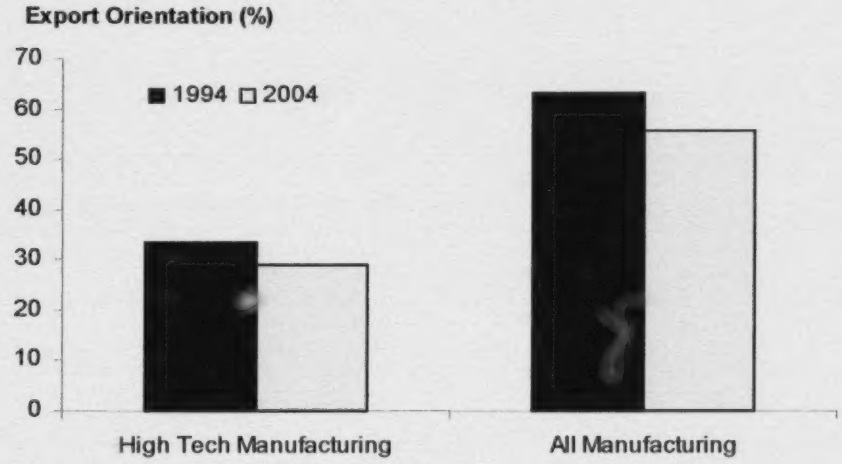



High technology goods comprised approximately 2.2% of all BC commodity exports in 2004, which is well down from the peak of 3.0% recorded in 1998. Slower growth in high tech exports compared to commodity trade as a whole since that peak year has led to a diminishing share for high technology commodities. However, this slippage has not been enough to wipe out the gains from a substantial growth spurt through the last half of the 1990s that more than doubled the value of high tech exports, and doubled the percentage of total BC commodity exports comprised of high tech goods. The 2.2% share recorded in 2004 is still well above the 1.3% portion of commodity exports that consisted of high technology products in 1991.

BC's high technology manufacturing sector tends to be geared more toward the Canadian market compared to manufacturing in the province in general. In 2004, only 29% of total high tech shipments were exported compared to 56% of manufactured goods overall.

**A smaller portion of high technology products are exported compared to total manufacturing**

**Figure 8**




## Export performance was mixed for high tech commodities

Change in exports was not consistent across all commodity groups in 2004, with some experiencing strong growth in shipments, while others continued to see exports fall.[11] International shipments of computers and telecommunications, the largest category of advanced technology product exports from BC, climbed 4.6%. This is the first time since 1998 that this commodity group has seen an increase in exports in excess of one percent and only the second year in the last six that shipments have not declined. In fact, this group's share of BC high tech exports has fallen from a peak of almost 71% in 1992 to 37% in 2004.

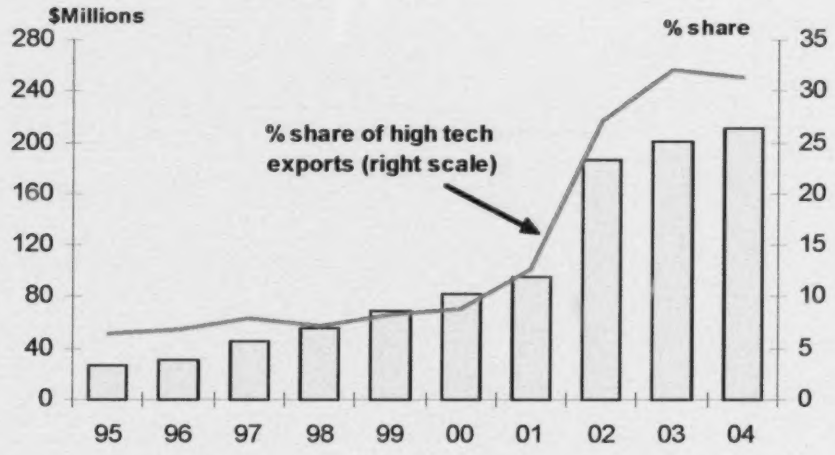
Exports of life sciences products continued to expand, rising 4.5% in 2004. This commodity group has seen substantial growth in exports in the last few years, increasing their share of BC high tech exports from 13% in 2001 to 31% in 2004, such that they are now ranked second, behind only computers and telecommunications. Certain types of electro-diagnostic apparatus dominate the life sciences group, making up over half of life sciences exports from the province in 2004. Other significant exports in this category include mechano-therapy and massage appliances, radioactive elements, isotopes and compounds, and artificial body parts.

**Life sciences products are now among the most significant BC high tech exports**

[11] For information on high technology commodity groups, see Appendix B.

**Figure 9**

**Exports of life sciences products have grown considerably in the last few years**




At the other end of the scale, opto-electronic and aerospace products continued to experience declining exports. Both these commodity groups saw strong growth in international shipments through the late 1990s, but have fallen back substantially in recent years. Exports of opto-electronic goods have fallen in each of the last four years. Large shipments of photosensitive semiconductor devices, photovoltaic cells and light emit diodes, and other optical devices, appliances and instruments boosted exports for a few years, but it looks like those increases were due to a temporary jump in demand. The slump in shipments of aerospace products appears to be more evenly spread among all aerospace products, although parts of turbo-jets or turbo-propellers saw the largest drop in exports.

**BC high technology exports by commodity group - 2004**

| | $ millions | % change |
|---|---|---|
| Computers and Telecommunications | 246.6 | 4.6 |
| Life Sciences | 210.6 | 4.5 |
| Computer Integrated Manufacturing | 97.4 | 55.9 |
| Aerospace | 68.2 | -18.7 |
| Opto-Electronics | 34.0 | -3.6 |
| Electronics | 8.9 | 114.3 |
| Biotechnology | 4.3 | 112.0 |
| Weapons and Nuclear | 1.5 | -28.7 |
| Material Design | 1.4 | -2.5 |
| **Total** | **672.9** | **7.1** |

Elsewhere, exports of computer integrated manufacturing products jumped 55.9%, the second straight year of double-digit growth, which has propelled this group into third in terms of high tech exports from the province. Exports of electronics and biotechnology products more than doubled from 2003 to 2004, although both these groups make up a relatively small percentage of overall BC high tech exports.

## The US is the primary destination for BC high tech exports

As with exports in general, the United States is the top destination for high technology goods exported from British Columbia; however, the percentage of BC high tech goods shipped to the US is much larger than that for commodity exports as a whole. Approximately $501.2 million, or 74%, of all high technology goods exported from BC in 2004 were shipped to the United States. By comparison, 65% of BC's total goods exports were US-bound.

**The US is the destination of 74% of BC high tech exports**

The United Kingdom, which received $19.1 million worth of BC high tech exports in 2004, was a distant second to the United States. China ranked third with $14.4 million worth of goods shipped there, followed by Japan, at just under $11.0 million. Exports to the countries of the European Union experienced robust growth of almost 25%, led by France, which imported double the value of high tech goods from BC compared to 2003, and the Netherlands, to which exports increased by 74%. Even more impressive was a jump of 55% in high tech exports to the Pacific Rim. South Korea, with a whopping 232% rise in shipments, and Hong Kong, to which exports increased by 85%, led the way, although a 49% jump in shipments to Japan and a 40% upsurge in exports to China were also impressive. The substantial growth in shipments to South Korea vaulted that country from the 17th most significant destination for BC high tech exports in 2003 to eighth in 2004.

**BC high technology exports by destination - 2004**

| | $ millions | % change |
|---|---|---|
| United States | 501.2 | -0.4 |
| European Union | 63.1 | 24.7 |
| United Kingdom | 19.1 | 19.0 |
| France | 9.4 | 99.9 |
| Pacific Rim | 62.7 | 55.4 |
| China | 14.4 | 39.6 |
| Japan | 11.0 | 49.0 |
| Rest of the world | 42.3 | 28.7 |
| **Total** | **672.9** | **7.1** |

## Most high tech exports from BC move by truck or rail

**The most popular mode of transport for exports of high technology goods from British Columbia is over land by truck or rail. Over half (52%) of all BC high tech exports are transported over land, with airfreight being the next most significant mode of transport (46%). Only a small portion of BC's high tech goods are shipped by sea (2%). The destination of the goods is a significant determinant of the mode of transport. Since the United States is the destination for the bulk of high tech exports and air transport is more expensive, on average, shipment over land is the leading method of transport.**

**BC high technology exports by destination and mode of transport - 2004**

| | Mode of Transport | $ millions | % of region | % of total high tech exports |
|---|---|---|---|---|
| United States | Land | 343.9 | 68.6 | 51.1 |
| | Sea | 0.0 | 0.0 | 0.0 |
| | Air | 157.2 | 31.4 | 23.4 |
| | *Total* | *501.2* | *100.0* | *74.5* |
| All other countries | Land | 8.4 | 4.9 | 1.3 |
| | Sea | 14.0 | 8.2 | 2.1 |
| | Air | 149.2 | 86.9 | 22.2 |
| | *Total* | *171.7* | *100.0* | *25.5* |
| Total | Land | 352.3 | 52.4 | 52.4 |
| | Sea | 14.1 | 2.1 | 2.1 |
| | Air | 306.5 | 45.5 | 45.5 |
| | *Total* | *672.9* | *100.0* | *100.0* |

**Over two-thirds (69%) of high tech goods exported from BC to the US are transported over land, with the remainder shipped by air.**

For all other countries excluding the US, air cargo is the most frequent mode of transport, accounting for almost 87% of the total.[12]

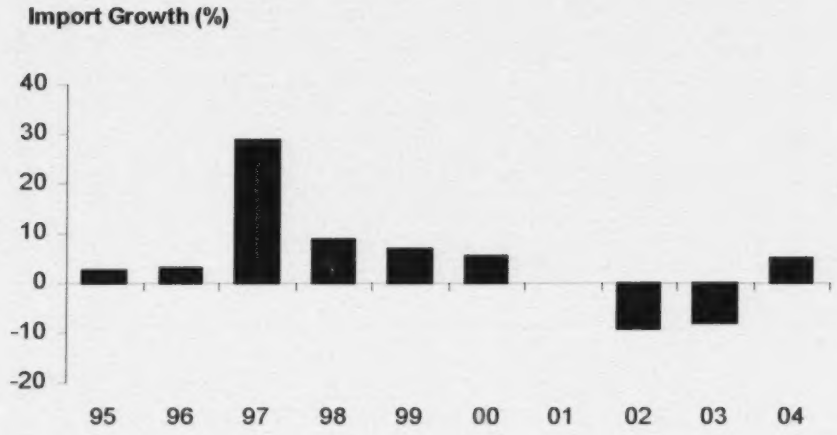
## Imports of high technology goods increased in 2004

After two years of substantial declines, the value of imports of high technology goods into BC jumped 4.9% in 2004. Part of the explanation for the drop in imports in the previous couple of years may be that a significant amount of high tech goods imported into the province are used as inputs into BC's own high technology manufacturing. Since demand for domestically produced manufactured high tech goods was down, the demand for input goods imported into the province was also muted. The rebound in production may have helped initiate the turnaround in imports as well.

**The value of high tech imports into BC climbed 4.9% in 2004**

**Imports of high technology products into British Columbia rebounded in 2004**

**Figure 10**




Most of the rise in imports of high tech goods was the result of an increase in shipments from the Pacific Rim, particularly China. While imports from the United States edged down 1.1% and high tech goods shipped to BC from the European Union fell 14.5%, shipments from the Pacific Rim surged 20.1%, including a substantial 50.2% jump in imports from China. Portable computers and other computer equipment and parts were among the goods driv-

[12] Note that the shipments by land to destinations outside the United States are not all destined for Mexico. Goods destined for overseas destinations may leave BC by truck or rail to points of departure in the United States where they are loaded onto ships or planes for the remainder of their journey.

ing much of the increase in high tech goods entering the province from China, as well as digital cameras and DVD players, which suggests that at least some of the rebound in imports was consumer-driven and not solely due to the demand created by the domestic high tech sector.

As with exports, the United States is the most significant origin of BC imports of high technology; however, it is not nearly as dominant as it is as a destination for exports. In 2004, approximately 43% of BC high tech imports originated in the US. Pacific Rim countries were the origin of almost a third of BC high tech imports (33%), with China leading the way (12%). The value of high tech goods shipped from China to BC in 2004 was slightly higher than that of the entire European Union, which was also the origin of 12% of high tech imports into BC.

**BC high technology imports by commodity group - 2004**

| | $ millions | % change |
|---|---|---|
| Computers and Telecommunications | 2,321.0 | 9.5 |
| Life Sciences | 578.8 | 4.3 |
| Aerospace | 396.8 | -19.6 |
| Electronics | 249.3 | 22.5 |
| Computer Integrated Manufacturing | 162.1 | -4.4 |
| Opto-Electronics | 112.6 | 19.5 |
| Biotechnology | 49.2 | -11.0 |
| Weapons and Nuclear | 32.7 | 16.8 |
| Material Design | 22.1 | 1.6 |
| **Total** | **3,924.6** | **4.9** |

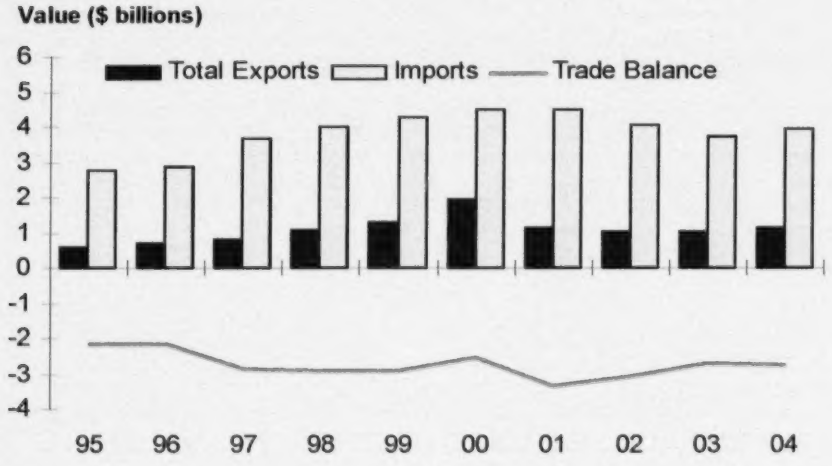
The value of high tech goods imported into BC was almost six times that of high tech exports in 2004. As with exports, computer and telecommunication goods are by far the largest category of high technology imports. This category comprised well over half (59%) of high tech imports into BC and was four times the value of imports of second-ranked life sciences commodities. Imports of aerospace products dropped for the third straight year, falling 19.6% and slipping under $400 million for the first time in a decade. On the flip side, shipments of electronics into the province jumped 22.5%, although the $249 million in imports is still well below peak levels seen in the late 1990s.

## BC's high tech trade deficit deepened slightly in 2004

British Columbia imports substantially more high technology goods than it exports and, as a result, the province runs a trade deficit in these commodities. After shrinking in the last couple of years, the trade deficit increased slightly in 2004, rising to just under $2.8 billion. In other words, BC imported $2.8 billion more in high tech goods than it exported in 2004. Even though exports increased at a more rapid pace compared to imports, the absolute increase in imports was larger, shifting the high tech trade balance further into deficit.

**BC has a $2.8 billion trade deficit in high tech goods**

**BC's imports far more high tech goods than it exports** **Figure 11**




Over a third ($972 million) of BC's high tech trade deficit is with the United States. This is in stark contrast to commodity trade as a whole, where BC has a substantial trade surplus with the US. British Columbia also has significant deficits in trade of high tech goods with countries of the Pacific Rim ($1 billion) and the European Union ($367 million).

With the exception of electronics, the trade deficit spans across all commodity groups. The largest deficits are for goods with the highest volumes of trade. The trade deficit for computers and telecommunications alone is just under three times the value of all BC high tech commodity exports combined.

**BC balance of trade in high technology goods by commodity group - 2004**

| | $ millions |
|---|---|
| Electronics | 62.7 |
| Material Design | -20.2 |
| Weapons and Nuclear | -27.7 |
| Biotechnology | -44.9 |
| Computer Integrated Manufacturing | --53.8 |
| Opto-Electronics | -75.8 |
| Aerospace | -253.9 |
| Life Sciences | -360.7 |
| Computers and Telecommunications | -2,000.4 |
| **Total** | **-2,774.7** |

## The United States exports and imports relatively more high tech goods compared to Canada

The United States exported $216.6 billion worth of high tech commodities in 2004, which represented about 23% of total US domestic exports. By comparison, high technology accounted for less than 7% of total Canadian exports and slightly more than 2% of BC origin exports. Quebec is the only province that has a comparable ratio to that of the United States. In 2004, high technology accounted for just over 20% of Quebec's total domestic exports.

The discrepancy is not nearly as large when it comes to imports as just over 16% of all imports into the US are high technology goods, compared to approximately 12% of imports into Canada.

After three consecutive years of significant declines, domestic exports of high technology goods from the United States (denominated in Canadian dollars) turned the corner in 2004, climbing 2.0%. Imports recovered the ground lost in 2003 with a 6.9% jump in 2004 to $310.3 billion. As recently as 1997, the United States had a surplus in trade of high tech goods of over $45 billion, but it has now recorded a deficit in trade in high tech goods for the third straight year. In 2004, the trade deficit stood at over $48 billion, a swing of more than $93 billion in just seven years.[13]

## Exports of high tech services weakened in 2004

Service exports are generally more difficult to measure compared to exports of goods. Some service exports take place when BC-

[13] Note that the balance of trade is calculated by taking the difference of total exports (including re-exports) and subtracting imports. The $216.6 billion export figure for 2004 excludes re-exports, which were $45.6 billion.

based professionals, such as engineers or software programmers, work for a period of time outside the province. Service exports also occur when, for example, an engineering firm produces a study in its BC office for an overseas client or when a software developer creates a new program that is "shipped" on-line to a client in another country.

The value of high tech service exports from BC fell 5% in 2004, largely due to a drop in film production following a banner year in 2003. The fallback in the motion picture industry resulted in an 18% drop in communications and film service exports. Business and computer service exports also slipped, declining 2% between 2003 and 2004. It should be emphasized that the data on high tech service exports should be considered a rough estimate. Detail on international service exports at the provincial level is not widely available and, as a result, some bold assumptions had to be made in order to estimate the data. Nevertheless, from the data that is available, it is clear that the value of international exports of high tech services is far in excess of that of high technology commodity exports. Based on the ballpark estimate of service exports produced here, the value of high tech service exports is approximately three times that of international shipments of high tech goods.

**BC high tech service exports fell 5% in 2004 to roughly $2.1 billion**

It is tough to predict the direction that BC's high tech service exports will take in the future as companies in BC and the rest of Canada are facing tough challenges from countries such as India, China and Russia, which are increasingly attracting information technology (IT) jobs. Offshoring of IT services to these countries is becoming common as companies in Canada and the United States recognize the potential savings that can be realized due to the lower cost of labour in these emerging economies. The mobility of computer services makes it easy to contract work to anywhere in the world and this could seriously affect the level of high tech service exports in the years to come as companies in the US and elsewhere that currently import services from BC could switch to lower-cost providers in these and other nascent economies.

Although Canada is one of the top countries in the world in terms of attracting "offshore" service work, it may already have lost some ground to these developing competitors. However, Canada still has some advantages to offer, particularly in attracting offshore work from the United States and other economies looking for a foothold in the NAFTA market. A.T. Kearney's annual ranking of the most attractive countries in which to locate offshore service work places

Canada ninth globally. [14] Canada is ranked high in terms of business environment (third among the countries studied, behind only Singapore and the United Kingdom) and people and skills availability (sixth). Where Canada is at a disadvantage compared to many of its competitors is in terms of compensation costs; however, even in the case of costs, Canada still compares favourably to the United States and most Western European countries. Canada's low-risk environment, well-established infrastructure and world class education system are attractive qualities for a company looking for offshore locations for service work and often outweigh cost considerations. These attributes could help BC companies stay competitive for offshore work in high tech services, despite the challenges from emerging economies.

[14] *A.T. Kearney's 2005 Offshore Location Attractiveness Index*. (2005). A.T. Kearney.

# BC's High Technology Industry in Context

While it is useful to examine the high technology industry's importance relative to other industries within British Columbia and to look at trends and compare the industry's performance today to what it was a year ago or a decade earlier, one cannot really judge the size and scope of BC's high tech sector without comparing it to high tech in other jurisdictions.

## BC ranks third in the country in high technology GDP

In 2004, British Columbia's high tech sector GDP of over $8.3 billion was slightly higher than the comparable Alberta figure of $8.0 billion. Ontario, the largest province in Canada with respect to population, also had the highest GDP for high technology, at $35.2 billion. Quebec ranked second with $21.3 billion in high tech output. The service sector was responsible for the majority of high tech GDP in each of the four top high technology provinces, but the degree of service sector dominance varied significantly. Similar to BC, Alberta's high tech sector is predominantly driven by the services sector, with almost 90% of high tech GDP generated by service industries. For Ontario, service industries were also the principal source of high tech output, generating just over two-thirds (69%) of high tech GDP. However, in Quebec, the goods sector plays a much more substantial role, with approximately 44% of high tech GDP produced by manufacturing industries. Quebec's large aerospace industry is part of the reason for the higher dependence on manufacturing and significant production of pharmaceuticals is also a factor.

**BC ranks third in Canada in terms of GDP generated by high tech**

Among the top four high tech provinces, all experienced strong growth in high tech GDP in 2004, with only Ontario (+3.1%) seeing a rise in GDP lower than the national average (+3.9%). British Columbia's 4.6% increase was only slightly behind Alberta's 4.7% jump, while Quebec's high tech GDP climbed 4.4%, a turnaround from three consecutive years of decline prior to 2004.

## BC had the strongest growth in high tech revenues in 2004

As with GDP, each of the four top high tech provinces also saw robust increases in high tech revenues in 2004. British Columbia's 6.8% jump was the top rate of change in the country, well ahead of the national average of 4.8%. Ontario, at 5.3%, was the only other province with revenue growth exceeding the Canadian average. This was the third straight year that BC led the country in rate of

change in high tech revenues. However, despite BC's recent relative success, the province is still ranked only fourth among the provinces in terms of high tech revenue.

## BC experienced the largest drop in high tech employment

The 2.4% slump in high technology employment in British Columbia was the biggest drop in the country. Nationally, the number of high tech jobs edged down 0.5%. In addition to BC, Quebec also experienced significant job loss in the high tech sector, with employment falling 2.0%. Alberta bucked the national trend with a solid 2.1% gain in high tech jobs, while employment in the sector climbed 0.4% in Ontario.

**BC suffered the largest drop in high tech employment in 2004**

British Columbia's job loss combined with Alberta's gains in high tech employment has vaulted Alberta ahead of BC for the first time since at least 1997. British Columbia now ranks fourth in the country in terms of high technology employment, while Alberta is third. However, for both BC and Alberta, their share of Canadian high tech employment is still lower than the share of total employment. BC has just over 12% of overall employment, but slightly less than 10% of high tech employment, while Alberta has 11% of total employment, but only 10% of high tech employment. Almost three-quarters of high technology employees reside in Ontario (42%) and Quebec (29%).

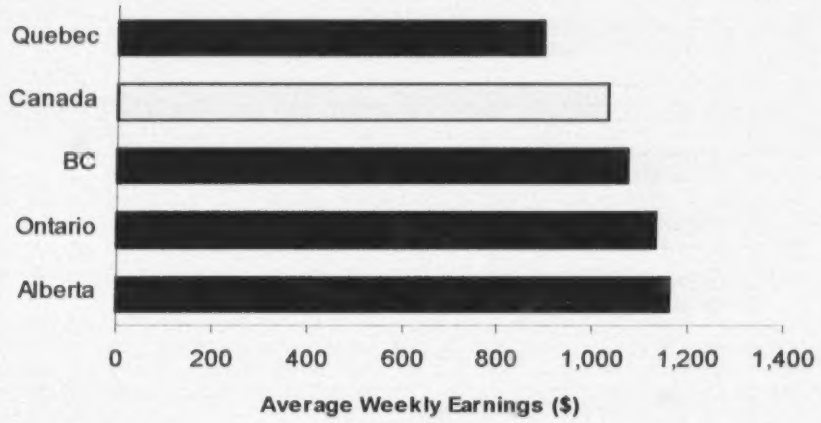
**Figure 12 BC ranks fourth in high tech employment in Canada, 2004**

## High tech earnings have increased across the country

Average weekly earnings in the high technology sector climbed in every province in 2004, averaging an increase of 2.0%. The fastest growth in earnings occurred in British Columbia (+2.7%), while Quebec (+2.5%) also experienced above average wage inflation. Alberta's average weekly earnings expanded at the same rate as the Canadian average, while Ontario's earnings growth trailed the rest of the country (+1.0%).

Alberta, with average high tech earnings of $1,160 per week, led the country, while Quebec had the lowest weekly earnings among the four high tech provinces ($890). High tech workers in both British Columbia ($1,070) and Ontario ($1,130) earned more than the national average of $1,030.

**BC high tech workers saw higher average weekly earnings than the national average in 2004** **Figure 13**



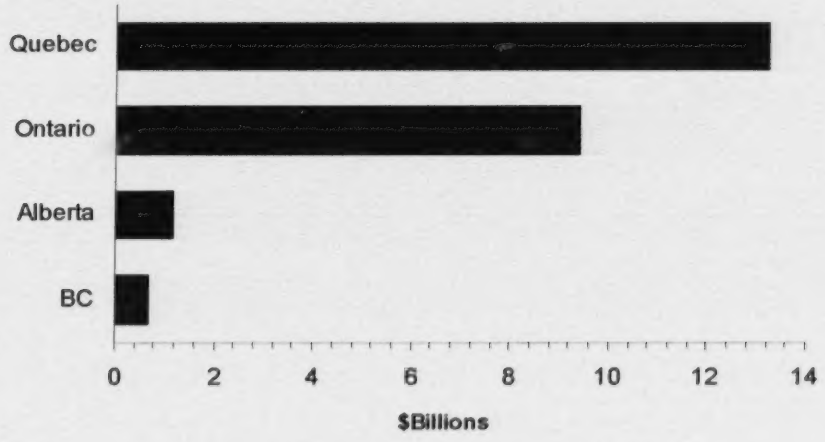

## BC's ranks fourth in value of high tech commodity exports

Exports of high tech goods from BC are relatively small compared to Canada's manufacturing hubs of Quebec and Ontario, which is not very surprising given the differences in population size, but BC high tech exports also lag those of Alberta. Quebec is by far the largest exporter of high tech goods in the country, shipping $13.2 billion worth in 2004, which was over a fifth of Quebec's total international exports. The significant aerospace industry in Quebec is the source of the majority of that province's high tech exports and is the reason for high tech's sub-

**BC exports relatively few high tech goods compared to other provinces**

stantial share of overall international shipments. Ontario was well behind Quebec with only $9.4 billion in high tech commodity exports, or 5.2% of its total exports. BC's $672.9 million represented 2.2% of total domestic exports, well behind high tech's 6.5% share of national exports. Although Alberta shipped more high tech goods to international destinations ($1.1 billion), these shipments made up a smaller share of overall exports (1.7%). This is because the energy sector is the dominant exporter in that province.

**Figure 14** **BC's exports of high tech goods are relatively small, 2004**




**Only BC and Ontario saw growth in high tech exports in 2004**

In terms of growth of high tech exports, Ontario led the way in 2004 with an 11.0% jump in shipments; however, BC fared far better than either Quebec or Alberta with its 7.1% increase in high tech exports. Quebec saw a 7.3% drop in exports, marking the fourth straight year international shipments of high tech products have slipped. High tech exports from Alberta have been plummeting as a result of the downturn in the telecommunications sector and the subsequent drop in demand for those products. International shipments fell by 73% from 2000 to 2003, so the 3.9% drop in 2004 is actually a marked improvement and may signal the start of a turnaround for that province.

## BC's high technology sector should continue to expand

British Columbia's high technology sector has undergone significant growth in the last decade and is likely to emerge as an even more important segment of the provincial economy in the years to come. The increasing penetration of high technology into all facets of life, including the adoption of high technology procedures and

equipment in many "traditional" industries, such as forestry, mining and agriculture, should ensure that this sector will continue to expand and British Columbia's presence in the sector should continue to grow as well.

# Detailed Tables

## List of Tables

Table 1. GDP (Constant Dollar) at Basic Prices, by Industry, 1997-2004 ..... 39

Table 2. GDP (Current Dollar) at Basic Prices, by Industry, 1997-2004 ..... 40

Table 3. GDP at basic prices, Selected Activities, 1997-2004 ..... 41

Table 4. High Technology GDP (Constant Dollar) at Basic Prices, by Province, 1997-2004 ..... 42

Table 5. High Technology GDP (Current Dollar) at Basic Prices, by Province, 1997-2004 ..... 43

Table 6. High Technology Sector Revenues, 1997-2004 ..... 44

Table 7. High Technology Sector Revenues, by Province, 1997-2004 ..... 44

Table 8. High Technology Sector Employment, 1997-2004 ..... 45

Table 9. Employment by Industry, British Columbia, 1994-2004 ..... 46

Table 10. High Tech Sector Employment, by Province, 1997-2004 ..... 47

Table 11. High Technology Sector Wages and Salaries, 1997-2004 ..... 47

Table 12. High Technology Sector Average Weekly Earnings, 1997-2004 ..... 48

Table 13. High Tech Sector Average Weekly Earnings, by Province, 1997-2004 ..... 48

Table 14. High Technology Sector Establishments, by Development Region and Regional District, 2001-2004 ..... 49

Table 15. High Technology Sector Establishments, by Industry, 1998-2004 ..... 50

Table 16. High Technology Sector Establishments, by Industry and Establishment Size, 2004 ..... 50

Table 17. Shipments and Exports of BC High Technology Goods and Total Processed Goods, 1994-2004 ..... 51

Table 18. Domestic Exports of High Technology Goods, by Destination and Mode of Transport, 1994-2004 ..... 52

Table 19. Top 25 High Technology Export Commodities, 2004 ..... 53

Table 20. Top 25 High Technology Import Commodities, 2004 ..... 53

Table 21. Domestic Exports of High Technology Goods and Total Goods, by Destination 1994-2004 ..... 54

Table 22. Imports of High Technology, by Country of Origin, 1994-2004 ..... 55

Table 23. Balance of Trade in High Technology Goods, by Country, 1994-2004 ..... 55

Table 24. Domestic Exports of High Technology Goods, by Commodity Group, 1994-2004 ..... 56

Table 25. Imports of High Tech Goods, by Commodity Group, 1994-2004 ..... 56

Table 26. Balance of Trade in High Technology Goods, by Commodity Group, 1994-2004 ..... 56

Table 27. Domestic Exports of High Technology Goods to the United States, by Commodity Group, 1994-2004 ..... 57

Table 28. Imports of High Technology Goods from the United States, by Commodity Group, 1994-2004 ..... 57

Table 29. Balance of Trade in High Technology Goods with the United States, by Commodity Group, 1994-2004 ..... 57

Table 30. Domestic Exports of High Technology Goods to the Pacific Rim, by Commodity Group, 1994-2004 ..... 58

Table 31. Imports of High Technology Goods from the Pacific Rim, by Commodity Group, 1994-2004 ..... 58

Table 32. Balance of Trade in High Technology Goods with the Pacific Rim, by Commodity Group, 1994-2004 ..... 58

Table 33. Domestic Exports of High Technology Goods to Japan, by Commodity Group, 1994-2004 ..... 59

Table 34. Imports of High Technology Goods from Japan, by Commodity Group, 1994-2004 ..... 59

Table 35. Balance of Trade in High Technology Goods with Japan, by Commodity Group, 1994-2004 ..... 59

Table 36. Domestic Exports of High Technology Goods to the European Union, by Commodity Group, 1994-2004 ..... 60

Table 37. Imports of High Technology Goods from the European Union, by Commodity Group, 1994-2004 ..... 60

Table 38. Balance of Trade in High Technology Goods with the European Union, by Commodity Group, 1994-2004 ..... 61

Table 39. Exports of High Technology Services, 1998-2004 ..... 61

Table 40. Domestic Exports of High Tech Goods by Province, 1994-2004 ..... 61

Table 41. Imports of High Technology Goods, Canada and BC, 1994-2004 ..... 62

Table 42. United States High Technology Commodity Trade, 1994-2004 ..... 62

Table 43. High Technology Trade Comparison: United States vs. Canada and BC (in Canadian $), 1994-2004 ..... 62

**Table 1. Gross Domestic Product (GDP) (Constant Dollar) at Basic Prices,[1] by Industry, 1997-2004**

| | Constant Dollars (1997 $ million) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **INDUSTRY** | **1997** | **1998** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** |
| **Manufacturing** | **743** | **818** | **1,076** | **1,917** | **1,696** | **1,314** | **1,427** | **1,521** |
| **Services** | **4,354** | **4,674** | **4,881** | **5,303** | **5,519** | **6,196** | **6,556** | **6,833** |
| Motion picture production & post production | 90 | 102 | 139 | 134 | 150 | 154 | 167 | 160 |
| Telecommunications | 2,408 | 2,430 | 2,662 | 2,874 | 2,788 | 3,241 | * | * |
| Engineering services | 1,006 | 971 | 872 | 864 | 919 | 873 | 897 | 889 |
| Computer and related services | 704 | 959 | 1,032 | 1,229 | 1,416 | 1,554 | 1,647 | 1,721 |
| Other services | 146 | 212 | 176 | 202 | 245 | 374 | * | * |
| **High Technology Sector Total** | **5,096** | **5,492** | **5,956** | **7,220** | **7,215** | **7,510** | **7,983** | **8,354** |
| **BC Industrial Aggregate** | **104,554** | **105,827** | **109,008** | **113,919** | **115,139** | **118,847** | **121,817** | **126,857** |

| | % change from previous year | | | | | | |
|---|---|---|---|---|---|---|---|
| **INDUSTRY** | **1998** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** |
| **Manufacturing** | **10.1** | **31.5** | **78.2** | **-11.5** | **-22.5** | **8.6** | **6.6** |
| **Services** | **7.3** | **4.4** | **8.6** | **4.1** | **12.3** | **5.8** | **4.2** |
| Motion picture production & post production | 13.3 | 36.3 | -3.6 | 11.9 | 2.7 | 8.4 | -4.2 |
| Telecommunications | 0.9 | 9.5 | 8.0 | -3.0 | 16.2 | * | * |
| Engineering services | -3.5 | -10.2 | -0.9 | 6.4 | -5.0 | 2.7 | -0.9 |
| Computer and related services | 36.2 | 7.6 | 19.1 | 15.2 | 9.7 | 6.0 | 4.5 |
| Other services | 45.2 | -17.0 | 14.8 | 21.3 | 52.7 | * | * |
| **High Technology Sector Total** | **7.8** | **8.4** | **21.2** | **-0.1** | **4.1** | **6.3** | **4.6** |
| **BC Industrial Aggregate** | **1.2** | **3.0** | **4.5** | **1.1** | **3.2** | **2.5** | **4.1** |

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concepts is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed due to confidentiality requirements.

Source: BC Stats and Statistics Canada

**Table 2. Gross Domestic Product (GDP) (Current Dollar) at Basic Prices,[1] by Industry, 1997-2004**

**Current Dollars ($ million)**

| INDUSTRY | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| **Manufacturing** | **743** | **734** | **920** | **1,254** | **1,096** | **871** | **939** | **1,010** |
| **Services** | **4,354** | **4,689** | **4,590** | **4,944** | **5,156** | **5,715** | **6,233** | **6,627** |
| Motion picture production & post production | 90 | 117 | 163 | 168 | 186 | 200 | 224 | 221 |
| Telecommunications | 2,408 | 2,390 | 2,394 | 2,482 | 2,401 | 2,698 | * | * |
| Engineering services | 1,006 | 1,008 | 837 | 884 | 963 | 946 | 1,011 | 1,012 |
| Computer and related services | 704 | 954 | 1,021 | 1,191 | 1,316 | 1,410 | 1,562 | 1,641 |
| Other services | 146 | 220 | 175 | 220 | 290 | 462 | * | * |
| **High Technology Sector Total** | **5,096** | **5,423** | **5,509** | **6,198** | **6,252** | **6,586** | **7,172** | **7,637** |
| **BC Industrial Aggregate** | **104,562** | **105,904** | **110,806** | **120,756** | **122,772** | **126,702** | **133,521** | **144,039** |
| **High Technology as a % of Total** | **4.9** | **5.1** | **5.0** | **5.1** | **5.1** | **5.2** | **5.4** | **5.3** |

**% change from previous year**

| INDUSTRY | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **Manufacturing** | **-1.2** | **25.3** | **36.3** | **-12.6** | **-20.5** | **7.8** | **7.6** |
| **Services** | **7.7** | **-2.1** | **7.7** | **4.3** | **10.8** | **9.1** | **6.3** |
| Motion picture production & post production | 30.0 | 39.3 | 3.1 | 10.7 | 7.5 | 12.0 | -1.3 |
| Telecommunications | -0.7 | 0.2 | 3.7 | -3.3 | 12.4 | * | * |
| Engineering services | 0.2 | -17.0 | 5.6 | 8.9 | -1.8 | 6.9 | 0.1 |
| Computer and related services | 35.5 | 7.0 | 16.7 | 10.5 | 7.1 | 10.8 | 5.1 |
| Other services | 50.7 | -20.5 | 25.7 | 31.8 | 59.3 | * | * |
| **High Technology Sector Total** | **6.4** | **1.6** | **12.5** | **0.9** | **5.3** | **8.9** | **6.5** |
| **BC Industrial Aggregate** | **1.3** | **4.6** | **9.0** | **1.7** | **3.2** | **5.4** | **7.9** |

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concepts is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

Source: BC Stats and Statistics Canada

**Table 3. Gross Domestic Product (GDP) at basic prices,[1] Selected Activities, 1997-2004**

| | Chained (1997 $ million) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| **Goods-producing industries** | **27,806** | **27,199** | **28,503** | **30,632** | **30,038** | **30,510** | **31,435** | **33,825** |
| Agriculture, forestry, fishing and hunting | 4,779 | 4,692 | 4,536 | 4,470 | 4,588 | 4,595 | 4,633 | 5,180 |
| Crop and animal production | 907 | 864 | 930 | 927 | 1,084 | 1,080 | 1,145 | 1,149 |
| Forestry and logging | 3,185 | 3,203 | 3,026 | 2,863 | 2,872 | 2,910 | 2,800 | 3,386 |
| Fishing, hunting and trapping | 201 | 131 | 101 | 115 | 95 | 115 | 128 | 126 |
| Support activities for agriculture and forestry | 486 | 497 | 476 | 550 | 511 | 468 | 519 | 501 |
| Mining, oil and gas extraction | 2,646 | 2,804 | 2,808 | 2,821 | 3,586 | 3,800 | 3,618 | 3,726 |
| Utilities | 2,468 | 2,534 | 2,576 | 2,591 | 2,024 | 2,462 | 2,367 | 2,339 |
| Construction | 6,434 | 5,932 | 5,718 | 5,635 | 5,854 | 6,045 | 6,877 | 7,472 |
| Manufacturing | 11,479 | 11,228 | 12,809 | 14,954 | 13,634 | 13,491 | 13,858 | 15,093 |
| Food manufacturing | 1,016 | 1,042 | 1,129 | 1,257 | 1,423 | 1,331 | 1,351 | 1,342 |
| Wood product manufacturing | 3,634 | 3,579 | 4,023 | 4,437 | 3,642 | 4,100 | 4,053 | 4,729 |
| Pulp and paper manufacturing | 1,599 | 1,334 | 1,887 | 1,832 | 1,538 | 1,589 | 1,723 | 1,764 |
| Primary and fabricated metal manufacturing | * | * | * | * | 1,501 | 1,404 | 1,426 | 1,553 |
| Computer and electronic product manufacturing | 415 | 476 | 742 | 1,323 | 1,062 | 756 | 804 | 830 |
| **Service-producing industries** | **76,748** | **78,636** | **80,518** | **83,343** | **85,131** | **88,101** | **90,149** | **92,832** |
| Wholesale trade | 4,932 | 5,329 | 5,368 | 5,539 | 5,628 | 5,819 | 6,134 | 6,605 |
| Retail trade | 6,050 | 6,236 | 6,370 | 6,707 | 6,968 | 7,156 | 7,280 | 7,631 |
| Transportation and warehousing | * | 6,679 | 6,956 | 7,458 | 7,344 | 7,537 | 7,535 | 8,072 |
| Information and cultural services | 3,618 | 3,827 | 4,046 | 4,287 | 4,389 | 4,872 | 5,127 | 5,272 |
| Finance, insurance, real estate, leasing, etc | 23,606 | 23,903 | 24,630 | 25,055 | 25,756 | 26,754 | 27,433 | 28,314 |
| Professional, scientific and technical services | 4,012 | 4,485 | 4,405 | 4,716 | 4,820 | 4,961 | 5,004 | 5,103 |
| Administration and support, waste mgmt. | 2,012 | 2,047 | 2,041 | 1,977 | 2,067 | 2,194 | 2,253 | 2,339 |
| Education | 5,406 | 5,588 | 5,753 | 5,887 | 5,978 | 6,097 | 5,966 | 6,022 |
| Health care and social assistance | 7,224 | 7,269 | 7,340 | 7,719 | 7,889 | 8,010 | 8,397 | 8,363 |
| Arts, entertainment and recreation | 1,128 | 1,124 | 1,213 | 1,224 | 1,282 | 1,307 | 1,370 | 1,370 |
| Accommodation and food services | 3,594 | 3,563 | 3,543 | 3,630 | 3,611 | 3,713 | 3,872 | 3,974 |
| Other services | 2,812 | 2,779 | 2,847 | 3,010 | 3,235 | 3,382 | 3,453 | 3,525 |
| Public administration | 5,764 | 5,821 | 6,050 | 6,236 | 6,354 | 6,496 | 6,553 | 6,545 |
| **GDP at basic prices** | **104,554** | **105,827** | **109,008** | **113,919** | **115,139** | **118,847** | **121,817** | **126,857** |

| | % change from previous year | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| **Goods-producing industries** | **-2.2** | **4.8** | **7.5** | **-1.9** | **1.6** | **3.0** | **7.6** |
| Agriculture, forestry, fishing and hunting | -1.8 | -3.3 | -1.5 | 2.6 | 0.2 | 0.8 | 11.8 |
| Crop and animal production | -4.7 | 7.6 | -0.3 | 16.9 | -0.4 | 6.0 | 0.3 |
| Forestry and logging | 0.6 | -5.5 | -5.4 | 0.3 | 1.3 | -3.8 | 20.9 |
| Fishing, hunting and trapping | -34.8 | -22.9 | 13.9 | -17.4 | 21.1 | 11.3 | -1.6 |
| Support activities for agriculture and forestry | 2.3 | -4.2 | 15.5 | -7.1 | -8.4 | 10.9 | -3.5 |
| Mining, oil and gas extraction | 6.0 | 0.1 | 0.5 | 27.1 | 6.0 | -4.8 | 3.0 |
| Utilities | 2.7 | 1.7 | 0.6 | -21.9 | 21.6 | -3.9 | -1.2 |
| Construction | -7.8 | -3.6 | -1.5 | 3.9 | 3.3 | 13.8 | 8.7 |
| Manufacturing | -2.2 | 14.1 | 16.7 | -8.8 | -1.0 | 2.7 | 8.9 |
| Food manufacturing | 2.6 | 8.3 | 11.3 | 13.2 | -6.5 | 1.5 | -0.7 |
| Wood product manufacturing | -1.5 | 12.4 | 10.3 | -17.9 | 12.6 | -1.1 | 16.7 |
| Pulp and paper manufacturing | -16.6 | 41.5 | -2.9 | -16.0 | 3.3 | 8.4 | 2.4 |
| Primary and fabricated metal manufacturing | * | * | * | * | -6.5 | 1.6 | 8.9 |
| Computer and electronic product manufacturing | 14.7 | 55.9 | 78.3 | -19.7 | -28.8 | 6.3 | 3.2 |
| **Service-producing industries** | **2.5** | **2.4** | **3.5** | **2.1** | **3.5** | **2.3** | **3.0** |
| Wholesale trade | 8.0 | 0.7 | 3.2 | 1.6 | 3.4 | 5.4 | 7.7 |
| Retail trade | 3.1 | 2.1 | 5.3 | 3.9 | 2.7 | 1.7 | 4.8 |
| Transportation and warehousing | * | 4.1 | 7.2 | -1.5 | 2.6 | 0.0 | 7.1 |
| Information and cultural services | 5.8 | 5.7 | 6.0 | 2.4 | 11.0 | 5.2 | 2.8 |
| Finance, insurance, real estate, leasing, etc | 1.3 | 3.0 | 1.7 | 2.8 | 3.9 | 2.5 | 3.2 |
| Professional, scientific and technical services | 11.8 | -1.8 | 7.1 | 2.2 | 2.9 | 0.9 | 2.0 |
| Administration and support, waste mgmt. | 1.7 | -0.3 | -3.1 | 4.6 | 6.1 | 2.7 | 3.8 |
| Education | 3.4 | 3.0 | 2.3 | 1.5 | 2.0 | -2.1 | 0.9 |
| Health care and social assistance | 0.6 | 1.0 | 5.2 | 2.2 | 1.5 | 4.8 | -0.4 |
| Arts, entertainment and recreation | -0.4 | 7.9 | 0.9 | 4.7 | 2.0 | 4.8 | 0.0 |
| Accommodation and food services | -0.9 | -0.6 | 2.5 | -0.5 | 2.8 | 4.3 | 2.6 |
| Other services | -1.2 | 2.4 | 5.7 | 7.5 | 4.5 | 2.1 | 2.1 |
| Public administration | 1.0 | 3.9 | 3.1 | 1.9 | 2.2 | 0.9 | -0.1 |
| **GDP at basic prices** | **1.2** | **3.0** | **4.5** | **1.1** | **3.2** | **2.5** | **4.1** |

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concepts is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed due to confidentiality requirements.

Source: Statistics Canada

**Table 4. High Technology GDP (Constant Dollar) at Basic Prices,[1] by Province, 1997-2004**

**Constant (Cdn $ million)**

| Province | | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|
| **Canada** | Manufacturing | 18,018 | 19,230 | 24,421 | 30,539 | 24,731 | 22,663 | 22,274 | 24,201 |
| | Services | 32,014 | 36,161 | 41,690 | 45,776 | 49,806 | 53,785 | 54,749 | 55,791 |
| | Total | 50,032 | 55,391 | 66,111 | 76,315 | 74,537 | 76,448 | 77,023 | 79,992 |
| **British Columbia** | Manufacturing | 743 | 818 | 1,076 | 1,917 | 1,696 | 1,314 | 1,427 | 1,521 |
| | Services | 4,354 | 4,674 | 4,881 | 5,303 | 5,519 | 6,196 | 6,556 | 6,833 |
| | Total | 5,096 | 5,492 | 5,956 | 7,220 | 7,215 | 7,510 | 7,983 | 8,354 |
| **Alberta** | Manufacturing | 910 | 1,041 | 1,046 | 1,203 | 801 | 805 | 786 | 819 |
| | Services | 4,128 | 4,937 | 5,287 | 5,859 | 6,329 | 6,797 | 6,860 | 7,185 |
| | Total | 5,038 | 5,978 | 6,332 | 7,061 | 7,130 | 7,601 | 7,646 | 8,004 |
| **Ontario** | Manufacturing | 8,765 | 9,544 | 11,528 | 13,624 | 10,650 | 10,216 | 10,071 | 10,837 |
| | Services | 12,956 | 14,645 | 18,207 | 20,617 | 22,593 | 23,903 | 24,101 | 24,399 |
| | Total | 21,721 | 24,189 | 29,735 | 34,241 | 33,243 | 34,119 | 34,172 | 35,236 |
| **Quebec** | Manufacturing | 6,679 | 6,907 | 9,532 | 11,570 | 10,206 | 8,965 | 8,625 | 9,383 |
| | Services | 7,101 | 8,031 | 9,174 | 9,650 | 10,609 | 11,556 | 11,770 | 11,915 |
| | Total | 13,780 | 14,938 | 18,707 | 21,220 | 20,814 | 20,520 | 20,395 | 21,298 |

**% change from previous year**

| Province | | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| **Canada** | Manufacturing | 6.7 | 27.0 | 25.1 | -19.0 | -8.4 | -1.7 | 8.7 |
| | Services | 13.0 | 15.3 | 9.8 | 8.8 | 8.0 | 1.8 | 1.9 |
| | Total | 10.7 | 19.4 | 15.4 | -2.3 | 2.6 | 0.8 | 3.9 |
| **British Columbia** | Manufacturing | 10.1 | 31.5 | 78.2 | -11.5 | -22.5 | 8.6 | 6.6 |
| | Services | 7.3 | 4.4 | 8.6 | 4.1 | 12.3 | 5.8 | 4.2 |
| | Total | 7.8 | 8.4 | 21.2 | -0.1 | 4.1 | 6.3 | 4.6 |
| **Alberta** | Manufacturing | 14.4 | 0.5 | 15.0 | -33.4 | 0.5 | -2.4 | 4.2 |
| | Services | 19.6 | 7.1 | 10.8 | 8.0 | 7.4 | 0.9 | 4.7 |
| | Total | 18.7 | 5.9 | 11.5 | 1.0 | 6.6 | 0.6 | 4.7 |
| **Ontario** | Manufacturing | 8.9 | 20.8 | 18.2 | -21.8 | -4.1 | -1.4 | 7.6 |
| | Services | 13.0 | 24.3 | 13.2 | 9.6 | 5.8 | 0.8 | 1.2 |
| | Total | 11.4 | 22.9 | 15.2 | -2.9 | 2.6 | 0.2 | 3.1 |
| **Quebec** | Manufacturing | 3.4 | 38.0 | 21.4 | -11.8 | -12.2 | -3.8 | 8.8 |
| | Services | 13.1 | 14.2 | 5.2 | 9.9 | 8.9 | 1.9 | 1.2 |
| | Total | 8.4 | 25.2 | 13.4 | -1.9 | -1.4 | -0.6 | 4.4 |

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concepts is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

Source: BC Stats

**Table 5. High Technology GDP (Current Dollar) at Basic Prices,[1] by Province, 1997-2004**

**Current Dollars ($ million)**

| Province | | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|
| **Canada** | Manufacturing | 18,018 | 18,109 | 22,750 | 26,067 | 21,975 | 20,184 | 19,147 | 20,631 |
| | Services | 32,014 | 36,359 | 39,814 | 42,994 | 46,333 | 49,607 | 50,786 | 52,462 |
| | Total | 50,032 | 54,468 | 62,564 | 69,062 | 68,308 | 69,791 | 69,933 | 73,093 |
| **British Columbia** | Manufacturing | 743 | 734 | 920 | 1,254 | 1,096 | 871 | 939 | 1,010 |
| | Services | 4,354 | 4,689 | 4,590 | 4,944 | 5,156 | 5,715 | 6,233 | 6,627 |
| | Total | 5,096 | 5,423 | 5,509 | 6,198 | 6,252 | 6,586 | 7,172 | 7,637 |
| **Alberta** | Manufacturing | 910 | 1,069 | 1,126 | 1,539 | 938 | 892 | 775 | 800 |
| | Services | 4,128 | 4,971 | 5,206 | 5,540 | 6,112 | 6,411 | 6,867 | 7,225 |
| | Total | 5,038 | 6,040 | 6,332 | 7,079 | 7,050 | 7,303 | 7,642 | 8,024 |
| **Ontario** | Manufacturing | 8,765 | 9,064 | 9,595 | 10,342 | 9,281 | 8,822 | 8,264 | 9,084 |
| | Services | 12,956 | 14,715 | 17,375 | 19,445 | 21,024 | 22,158 | 22,129 | 22,722 |
| | Total | 21,721 | 23,779 | 26,970 | 29,787 | 30,305 | 30,980 | 30,393 | 31,806 |
| **Quebec** | Manufacturing | 6,679 | 6,367 | 9,886 | 11,265 | 9,653 | 8,624 | 8,136 | 8,610 |
| | Services | 7,101 | 8,105 | 8,719 | 9,047 | 9,774 | 10,634 | 10,632 | 10,836 |
| | Total | 13,780 | 14,471 | 18,605 | 20,312 | 19,428 | 19,258 | 18,769 | 19,446 |

**% change from previous year**

| Province | | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| **Canada** | Manufacturing | 0.5 | 25.6 | 14.6 | -15.7 | -8.2 | -5.1 | 7.8 |
| | Services | 13.6 | 9.5 | 8.0 | 7.8 | 7.1 | 2.4 | 3.3 |
| | Total | 8.9 | 14.9 | 10.4 | -1.1 | 2.2 | 0.2 | 4.5 |
| **British Columbia** | Manufacturing | -1.2 | 25.3 | 36.3 | -12.6 | -20.5 | 7.8 | 7.6 |
| | Services | 7.7 | -2.1 | 7.7 | 4.3 | 10.8 | 9.1 | 6.3 |
| | Total | 6.4 | 1.6 | 12.5 | 0.9 | 5.3 | 8.9 | 6.5 |
| **Alberta** | Manufacturing | 17.5 | 5.3 | 36.7 | -39.1 | -4.9 | -13.1 | 3.2 |
| | Services | 20.4 | 4.7 | 6.4 | 10.3 | 4.9 | 7.1 | 5.2 |
| | Total | 19.9 | 4.8 | 11.8 | -0.4 | 3.6 | 4.6 | 5.0 |
| **Ontario** | Manufacturing | 3.4 | 5.9 | 7.8 | -10.3 | -4.9 | -6.3 | 9.9 |
| | Services | 13.6 | 18.1 | 11.9 | 8.1 | 5.4 | -0.1 | 2.7 |
| | Total | 9.5 | 13.4 | 10.4 | 1.7 | 2.2 | -1.9 | 4.6 |
| **Quebec** | Manufacturing | -4.7 | 55.3 | 13.9 | -14.3 | -10.7 | -5.7 | 5.8 |
| | Services | 14.1 | 7.6 | 3.8 | 8.0 | 8.8 | 0.0 | 1.9 |
| | Total | 5.0 | 28.6 | 9.2 | -4.4 | -0.9 | -2.5 | 3.6 |

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concepts is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

Source: BC Stats

**Table 6. High Technology Sector Revenues,[1] 1997-2004**

$ million

| INDUSTRY | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| **Manufacturing** | **1,763** | **1,845** | **2,267** | **2,819** | **2,524** | **2,122** | **2,241** | **2,333** |
| **Services** | **7,226** | **7,920** | **8,494** | **8,870** | **8,900** | **9,961** | **10,860** | **11,662** |
| Motion picture production & post produc | 133 | 206 | 477 | 401 | 413 | 445 | 500 | 493 |
| Telecommunications | 3,795 | 4,297 | 4,376 | 4,536 | 4,097 | 4,545 | 4,910 | 5,135 |
| Engineering services | 1,678 | 1,281 | 1,154 | 1,142 | 1,439 | 1,415 | 1,513 | 1,514 |
| Computer and related services | 1,338 | 1,820 | 2,172 | 2,415 | 2,451 | 2,542 | 2,796 | 2,950 |
| Other services | 283 | 315 | 315 | 376 | 500 | 1,014 | 1,142 | 1,570 |
| **High Technology Sector Total** | **8,988** | **9,764** | **10,761** | **11,689** | **11,424** | **12,082** | **13,101** | **13,996** |

% change from previous year

| INDUSTRY | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **Manufacturing** | **4.7** | **22.9** | **24.3** | **-10.5** | **-15.9** | **5.6** | **4.1** |
| **Services** | **9.6** | **7.2** | **4.4** | **0.3** | **11.9** | **9.0** | **7.4** |
| Motion picture production & post produc | 54.9 | 131.6 | -15.9 | 3.0 | 7.7 | 12.4 | -1.4 |
| Telecommunications | 13.2 | 1.8 | 3.7 | -9.7 | 10.9 | 8.0 | 4.6 |
| Engineering services | -23.7 | -9.9 | -1.0 | 26.0 | -1.7 | 6.9 | 0.1 |
| Computer and related services | 36.0 | 19.3 | 11.2 | 1.5 | 3.7 | 10.0 | 5.5 |
| Other services | 11.3 | 0.0 | 19.4 | 33.0 | 102.8 | 12.6 | 37.5 |
| **High Technology Sector Total** | **8.6** | **10.2** | **8.6** | **-2.3** | **5.8** | **8.4** | **6.8** |

1. Note that revenues for the service industries are collected on a company rather than an establishment basis. As a result, revenues for those industries represent the entire Canadian earnings of companies headquartered in BC. Totals are calculated using unrounded data.

Source: BC Stats and Statistics Canada

**Table 7. High Technology Sector Revenues, by Province, 1997-2004**

Cdn $ million

| Province | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| Canada | 96,275 | 111,099 | 124,124 | 144,935 | 142,689 | 139,325 | 140,068 | 146,747 |
| British Columbia | 8,988 | 9,764 | 10,761 | 11,689 | 11,424 | 12,082 | 13,101 | 13,996 |
| Alberta | 9,041 | 10,797 | 10,990 | 13,052 | 14,069 | 13,262 | 13,805 | 14,431 |
| Ontario | 43,180 | 49,890 | 54,877 | 64,094 | 64,928 | 62,671 | 61,259 | 64,523 |
| Quebec | 28,011 | 32,298 | 38,785 | 46,639 | 42,522 | 41,338 | 41,470 | 42,730 |

% change from previous year

| Province | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| Canada | 15.4 | 11.7 | 16.8 | -1.5 | -2.4 | 0.5 | 4.8 |
| British Columbia | 8.6 | 10.2 | 8.6 | -2.3 | 5.8 | 8.4 | 6.8 |
| Alberta | 19.4 | 1.8 | 18.8 | 7.8 | -5.7 | 4.1 | 4.5 |
| Ontario | 15.5 | 10.0 | 16.8 | 1.3 | -3.5 | -2.3 | 5.3 |
| Quebec | 15.3 | 20.1 | 20.3 | -8.8 | -2.8 | 0.3 | 3.0 |

Source: BC Stats

**Table 8. High Technology Sector Employment,[1] 1997-2004**

| INDUSTRY | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| **Manufacturing Industries** | **10,790** | **11,230** | **13,620** | **15,050** | **15,200** | **14,080** | **12,940** | **12,270** |
| **Service Industries** | **43,950** | **42,730** | **45,880** | **49,260** | **52,720** | **51,310** | **53,290** | **52,390** |
| Motion picture production & post production | 1,540 | 2,390 | 3,740 | 3,090 | 3,240 | 3,230 | 3,410 | 2,970 |
| Telecommunications | 16,330 | 15,940 | 15,310 | 15,890 | 15,760 | 14,880 | 14,880 | 14,250 |
| Engineering services | 12,770 | 10,070 | 9,900 | 9,300 | 10,100 | 9,300 | 8,980 | 8,900 |
| Computer and related services | 10,870 | 11,910 | 14,370 | 18,110 | 20,190 | 20,720 | 22,830 | 23,220 |
| Other services | 2,440 | 2,430 | 2,550 | 2,880 | 3,440 | 3,190 | 3,190 | 3,060 |
| **High Technology Sector Total** | **54,730** | **53,970** | **59,500** | **64,310** | **67,920** | **65,380** | **66,230** | **64,660** |
| **BC Industrial Aggregate** | **1,496,760** | **1,508,590** | **1,511,500** | **1,571,810** | **1,593,100** | **1,610,250** | **1,636,780** | **1,670,530** |

**% change from previous year**

| INDUSTRY | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **Manufacturing Industries** | **4.1** | **21.2** | **10.5** | **1.0** | **-7.4** | **-8.1** | **-5.1** |
| **Service Industries** | **-2.8** | **7.4** | **7.4** | **7.0** | **-2.7** | **3.9** | **-1.7** |
| Motion picture production & post production | 55.1 | 56.9 | -17.3 | 4.6 | -0.2 | 5.5 | -12.8 |
| Telecommunications | -2.4 | -3.9 | 3.7 | -0.8 | -5.6 | 0.1 | -4.3 |
| Engineering services | -21.1 | -1.7 | -6.1 | 8.6 | -7.9 | -3.4 | -0.9 |
| Computer and related services | 9.6 | 20.7 | 26.0 | 11.5 | 2.6 | 10.2 | 1.7 |
| Other services | -0.2 | 4.9 | 12.6 | 19.5 | -7.3 | 0.2 | -4.3 |
| **High Technology Sector Total** | **-1.4** | **10.3** | **8.1** | **5.6** | **-3.7** | **1.3** | **-2.4** |
| **BC Industrial Aggregate** | **0.8** | **0.2** | **4.0** | **1.4** | **1.1** | **1.6** | **2.1** |

1. Totals and percent changes are calculated using unrounded data.

Source: BC Stats and Statistics Canada

**Table 9. Employment by Industry,[1] British Columbia, 1994-2004**

**Persons (thousands)**

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Goods Producing Industries** | **302.5** | **299.0** | **298.8** | **308.6** | **301.3** | **301.9** | **314.8** | **300.8** | **291.9** | **289.6** | **294.8** |
| Agriculture and Related | na | na | na | na | na | na | na | na | na | na | na |
| Fishing and Related | na | na | na | na | na | na | na | na | na | na | na |
| Forestry and Related | 83.0 | 80.5 | 81.2 | 79.4 | 73.6 | 76.8 | 80.5 | 70.7 | 59.3 | 58.1 | 56.7 |
| *Logging and Forestry* | *19.6* | *19.8* | *20.1* | *19.7* | *17.6* | *17.8* | *18.3* | *18.1* | *13.4* | *10.2* | *8.8* |
| *Paper and Allied Products* | *20.3* | *20.3* | *18.5* | *16.6* | *16.6* | *17.8* | *18.8* | *15.0* | *11.5* | *13.7* | *13.2* |
| *Wood Manufacturing* | *43.1* | *40.4* | *42.6* | *43.1* | *39.4* | *41.2* | *43.4* | *37.6* | *34.4* | *34.2* | *34.8* |
| Mining and Oil and Gas Extraction | 12.3 | 13.1 | 11.9 | 12.8 | 13.0 | 10.7 | 10.6 | 10.5 | 10.3 | 10.5 | 11.5 |
| Other Manufacturing | 80.7 | 76.1 | 77.2 | 83.2 | 87.8 | 91.5 | 98.9 | 97.8 | 101.3 | 99.6 | 98.8 |
| Construction | 74.1 | 74.8 | 76.7 | 80.0 | 77.2 | 72.6 | 74.3 | 73.7 | 77.2 | 81.1 | 89.1 |
| Utilities | 9.0 | 8.3 | 8.6 | 8.6 | 8.4 | 9.1 | 9.4 | 9.2 | 9.3 | 8.6 | 8.7 |
| **Service Producing Industries** | **1,089.7** | **1,142.3** | **1,157.4** | **1,183.0** | **1,198.1** | **1,199.6** | **1,250.4** | **1,284.9** | **1,309.4** | **1,336.6** | **1,359.8** |
| Retail and Wholesale Trade | 240.6 | 252.0 | 252.9 | 255.9 | 257.8 | 258.7 | 271.3 | 281.4 | 294.3 | 307.3 | 318.7 |
| Transportation and Warehousing | 84.9 | 86.7 | 82.0 | 83.6 | 85.1 | 83.2 | 83.2 | 82.4 | 82.9 | 83.1 | 84.6 |
| Information and Culture | 33.6 | 34.4 | 35.0 | 34.5 | 35.0 | 34.5 | 36.3 | 38.1 | 38.9 | 40.4 | 40.7 |
| *Finance, Insurance and Real Estate* | *93.3* | *97.6* | *94.8* | *99.8* | *99.7* | *97.9* | *101.6* | *100.4* | *100.4* | *98.8* | *96.4* |
| Professional, Scientific and Technical | 55.3 | 65.1 | 66.6 | 68.9 | 72.4 | 74.4 | 82.0 | 84.8 | 83.2 | 83.9 | 84.3 |
| Educational | 105.1 | 112.6 | 120.5 | 121.5 | 122.2 | 123.6 | 127.7 | 132.8 | 136.1 | 136.7 | 137.3 |
| Health and Social | 144.3 | 150.9 | 154.0 | 155.7 | 162.9 | 167.9 | 174.5 | 178.1 | 183.8 | 190.8 | 190.1 |
| Arts, Entertainment and Recreation | 28.7 | 30.0 | 29.9 | 29.5 | 27.3 | 24.7 | 26.5 | 27.4 | 28.8 | 30.6 | 31.8 |
| Accommodation, and Food | 126.2 | 127.4 | 132.1 | 137.3 | 139.0 | 139.3 | 144.8 | 147.2 | 147.2 | 146.7 | 145.4 |
| Public Administration | 77.4 | 76.8 | 76.1 | 76.1 | 76.6 | 74.7 | 74.1 | 74.8 | 73.6 | 75.9 | 80.3 |
| Other Services | 100.4 | 108.9 | 113.6 | 121.1 | 120.1 | 120.7 | 128.5 | 137.4 | 140.3 | 142.4 | 150.2 |
| **BC Industrial Aggregate** | **1,395.8** | **1,444.9** | **1,459.4** | **1,496.8** | **1,508.6** | **1,511.5** | **1,571.8** | **1,593.1** | **1,610.2** | **1,636.8** | **1,670.5** |
| **High Technology Sector Total** | **na** | **na** | **na** | **54.7** | **54.0** | **59.5** | **64.3** | **67.9** | **65.4** | **66.2** | **64.7** |

**% change from previous year**

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Goods Producing Industries** | **-1.2** | **-0.1** | **3.3** | **-2.4** | **0.2** | **4.3** | **-4.4** | **-3.0** | **-0.8** | **1.8** |
| Agriculture and Related | na | na | na | na | na | na | na | na | na | na |
| Fishing and Related | na | na | na | na | na | na | na | na | na | na |
| Forestry and Related | -2.9 | 0.8 | -2.3 | -7.2 | 4.3 | 4.8 | -12.1 | -16.1 | -2.1 | -2.4 |
| *Logging and Forestry* | 1.2 | 1.3 | -2.0 | -10.6 | 0.8 | 2.9 | -0.8 | -26.1 | -23.9 | -14.0 |
| *Paper and Allied Products* | -0.1 | -8.9 | -10.3 | 0.1 | 7.1 | 6.0 | -20.2 | -23.5 | 19.6 | -4.0 |
| *Wood Manufacturing* | -6.1 | 5.5 | 1.0 | -8.5 | 4.7 | 5.1 | -13.3 | -8.3 | -0.8 | 1.7 |
| Mining and Oil and Gas Extraction | 6.2 | -9.2 | 7.7 | 1.8 | -18.0 | -0.4 | -0.7 | -2.2 | 2.0 | 9.5 |
| Other Manufacturing | -5.7 | 1.5 | 7.8 | 5.5 | 4.2 | 8.1 | -1.1 | 3.5 | -1.6 | -0.8 |
| Construction | 0.9 | 2.6 | 4.4 | -3.5 | -5.9 | 2.3 | -0.8 | 4.7 | 5.0 | 9.9 |
| Utilities | -6.8 | 3.4 | -0.6 | -2.2 | 8.6 | 2.7 | -1.8 | 1.1 | -7.5 | 1.0 |
| **Service Producing Industries** | **4.8** | **1.3** | **2.2** | **1.3** | **0.1** | **4.2** | **2.8** | **1.9** | **2.1** | **1.7** |
| Retail and Wholesale Trade | 4.7 | 0.4 | 1.2 | 0.7 | 0.4 | 4.9 | 3.7 | 4.6 | 4.4 | 3.7 |
| Transportation and Warehousing | 2.1 | -5.4 | 2.0 | 1.7 | -2.2 | 0.0 | -1.0 | 0.6 | 0.2 | 1.8 |
| Information and Culture | 2.4 | 1.9 | -1.5 | 1.6 | -1.5 | 5.2 | 4.9 | 2.2 | 3.7 | 0.7 |
| Finance, Insurance and Real Estate | 4.6 | -2.9 | 4.4 | 0.7 | -1.8 | 3.8 | -1.1 | -0.1 | -1.6 | -2.4 |
| Professional, Scientific and Technical | 17.7 | 2.2 | 3.6 | 5.1 | 2.7 | 10.3 | 3.4 | -1.9 | 0.9 | 0.5 |
| Educational | 7.1 | 7.0 | 0.8 | 0.6 | 1.1 | 3.3 | 4.0 | 2.5 | 0.5 | 0.4 |
| Health and Social | 4.6 | 2.0 | 1.1 | 4.7 | 3.0 | 3.9 | 2.1 | 3.2 | 3.8 | -0.4 |
| Arts, Entertainment and Recreation | 4.5 | -0.3 | -1.4 | -7.3 | -9.4 | 7.0 | 3.5 | 5.0 | 6.3 | 4.0 |
| Accommodation, and Food | 1.0 | 3.7 | 3.9 | 1.3 | 0.2 | 4.0 | 1.6 | 0.0 | -0.4 | -0.9 |
| Public Administration | -0.8 | -0.9 | 0.0 | 0.6 | -2.4 | -0.9 | 1.0 | -1.7 | 3.1 | 5.8 |
| Other Services | 8.5 | 4.3 | 6.6 | -0.8 | 0.5 | 6.4 | 7.0 | 2.1 | 1.5 | 5.5 |
| **BC Industrial Aggregate** | **3.5** | **1.0** | **2.6** | **0.8** | **0.2** | **4.0** | **1.4** | **1.1** | **1.6** | **2.1** |
| **High Technology Sector Total** | **na** | **na** | **na** | **-1.4** | **10.2** | **8.1** | **5.6** | **-3.7** | **1.3** | **-2.4** |

1. Totals and percent changes are calculated using unrounded data.

na: Data not available for specific industry.

Source: Statistics Canada

**Table 10. High Technology Sector Employment, by Province, 1997-2004**

| Province | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| Canada | 546,360 | 584,880 | 629,410 | 671,250 | 694,100 | 688,930 | 687,030 | 683,630 |
| British Columbia | 54,730 | 53,970 | 59,500 | 64,310 | 67,920 | 65,380 | 66,230 | 64,660 |
| Alberta | 46,470 | 52,880 | 59,120 | 60,910 | 65,420 | 65,060 | 63,670 | 65,040 |
| Ontario | 230,190 | 246,950 | 265,850 | 285,390 | 288,760 | 289,500 | 289,060 | 290,240 |
| Quebec | 163,140 | 175,440 | 184,660 | 198,100 | 204,800 | 202,090 | 205,510 | 201,460 |

**% change from previous year**

| Province | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| Canada | 7.0 | 7.6 | 6.6 | 3.4 | -0.7 | -0.3 | -0.5 |
| British Columbia | -1.4 | 10.3 | 8.1 | 5.6 | -3.7 | 1.3 | -2.4 |
| Alberta | 13.8 | 11.8 | 3.0 | 7.4 | -0.5 | -2.1 | 2.1 |
| Ontario | 7.3 | 7.7 | 7.4 | 1.2 | 0.3 | -0.2 | 0.4 |
| Quebec | 7.5 | 5.3 | 7.3 | 3.4 | -1.3 | 1.7 | -2.0 |

Source: BC Stats

**Table 11. High Technology Sector Wages and Salaries, 1997-2004**

**Value ($ million)**

| INDUSTRY | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| **Manufacturing Industries** | **386.4** | **447.5** | **506.4** | **555.4** | **632.9** | **712.4** | **697.2** | **679.8** |
| **Service Industries** | **2,295.9** | **2,121.9** | **2,216.1** | **2,525.2** | **2,751.9** | **2,690.8** | **2,901.0** | **2,927.9** |
| Motion picture production & post production | 44.9 | 53.6 | 114.9 | 95.5 | 94.2 | 101.6 | 114.0 | 112.6 |
| Telecommunications | 738.2 | 717.6 | 688.0 | 715.7 | 711.6 | 692.4 | 693.6 | 671.6 |
| Engineering services | 803.6 | 583.9 | 495.7 | 529.2 | 650.7 | 566.7 | 617.0 | 617.4 |
| Computer and related services | 596.7 | 653.3 | 805.4 | 1,051.2 | 1,134.7 | 1,181.1 | 1,309.0 | 1,370.3 |
| Other services | 112.5 | 113.6 | 112.1 | 133.5 | 160.7 | 148.9 | 167.4 | 156.1 |
| **High Technology Sector Total** | **2,682.3** | **2,569.4** | **2,722.5** | **3,080.5** | **3,384.8** | **3,403.2** | **3,598.3** | **3,607.7** |
| **BC Industrial Aggregate** | **49,851.4** | **50,583.7** | **51,305.4** | **54,325.5** | **55,446.7** | **56,622.9** | **58,130.3** | **60,474.4** |

**% change from previous year**

| INDUSTRY | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **Manufacturing Industries** | **15.8** | **13.2** | **9.7** | **14.0** | **12.6** | **-2.1** | **-2.5** |
| **Service Industries** | **-7.6** | **4.4** | **13.9** | **9.0** | **-2.2** | **7.8** | **0.9** |
| Motion picture production & post production | 19.4 | 114.4 | -16.9 | -1.4 | 7.9 | 12.2 | -1.2 |
| Telecommunications | -2.8 | -4.1 | 4.0 | -0.6 | -2.7 | 0.2 | -3.2 |
| Engineering services | -27.3 | -15.1 | 6.8 | 23.0 | -12.9 | 8.9 | 0.1 |
| Computer and related services | 9.5 | 23.3 | 30.5 | 7.9 | 4.1 | 10.8 | 4.7 |
| Other services | 0.9 | -1.3 | 19.1 | 20.3 | -7.3 | 12.4 | -6.8 |
| **High Technology Sector Total** | **-4.2** | **6.0** | **13.2** | **9.9** | **0.5** | **5.7** | **0.3** |
| **BC Industrial Aggregate** | **1.5** | **1.4** | **5.9** | **2.1** | **2.1** | **2.7** | **4.0** |

Source: BC Stats and Statistics Canada

**Table 12. High Technology Sector Average Weekly Earnings,[1] 1997-2004**

Dollars per employee week (including overtime)

| INDUSTRY | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| **Manufacturing Industries** | **690** | **760** | **710** | **710** | **800** | **970** | **1,030** | **1,060** |
| **Service Industries** | **1,000** | **950** | **930** | **980** | **1,000** | **1,010** | **1,040** | **1,070** |
| Motion picture production & post production | 560 | 430 | 590 | 590 | 560 | 600 | 640 | 730 |
| Telecommunications | 870 | 860 | 860 | 860 | 870 | 890 | 890 | 900 |
| Engineering services | 1,210 | 1,110 | 960 | 1,090 | 1,240 | 1,170 | 1,320 | 1,330 |
| Computer and related services | 1,050 | 1,050 | 1,070 | 1,110 | 1,080 | 1,090 | 1,100 | 1,130 |
| Other services | 880 | 900 | 840 | 890 | 900 | 900 | 1,010 | 980 |
| **High Technology Sector Total** | **940** | **910** | **880** | **920** | **960** | **1,000** | **1,040** | **1,070** |
| **BC Industrial Aggregate** | **640** | **640** | **650** | **660** | **670** | **670** | **680** | **690** |

% change from previous year

| INDUSTRY | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **Manufacturing Industries** | **11.3** | **-6.7** | **-0.7** | **12.8** | **21.5** | **6.5** | **2.8** |
| **Service Industries** | **-4.9** | **-2.7** | **6.1** | **1.8** | **0.5** | **3.8** | **2.7** |
| Motion picture production & post production | -23.1 | 37.0 | 0.6 | -5.9 | 8.2 | 6.3 | 13.4 |
| Telecommunications | -0.4 | -0.2 | 0.2 | 0.3 | 3.1 | 0.2 | 1.1 |
| Engineering services | -7.9 | -13.6 | 13.6 | 13.2 | -5.4 | 12.8 | 1.0 |
| Computer and related services | -0.1 | 2.2 | 3.6 | -3.2 | 1.4 | 0.6 | 2.9 |
| Other services | 1.3 | -5.9 | 5.5 | 0.7 | -0.1 | 12.4 | -2.8 |
| **High Technology Sector Total** | **-2.9** | **-3.9** | **4.7** | **4.0** | **4.5** | **4.4** | **2.7** |
| **BC Industrial Aggregate** | **0.7** | **1.2** | **1.8** | **0.7** | **1.0** | **1.0** | **1.9** |

1. Totals and percent changes are calculated using unrounded data.

Source: BC Stats and Statistics Canada

**Table 13. High Technology Sector Average Weekly Earnings, by Province, 1997-2004**

| Province | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|
| Canada | 870 | 880 | 890 | 930 | 960 | 970 | 1,010 | 1,030 |
| British Columbia | 940 | 910 | 880 | 920 | 960 | 1,000 | 1,040 | 1,070 |
| Alberta | 1,000 | 970 | 910 | 980 | 1,020 | 1,090 | 1,130 | 1,160 |
| Ontario | 930 | 960 | 990 | 1,040 | 1,080 | 1,080 | 1,120 | 1,130 |
| Quebec | 790 | 790 | 840 | 840 | 850 | 860 | 870 | 890 |

% change from previous year

| Province | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| Canada | 1.1 | 1.9 | 4.5 | 2.6 | 1.6 | 3.2 | 2.0 |
| British Columbia | -2.9 | -3.9 | 4.7 | 4.0 | 4.5 | 4.4 | 2.7 |
| Alberta | -2.5 | -7.0 | 8.4 | 4.4 | 6.3 | 3.9 | 2.0 |
| Ontario | 3.4 | 2.8 | 5.4 | 3.6 | 0.0 | 3.3 | 1.0 |
| Quebec | -0.4 | 5.9 | 0.4 | 1.1 | 1.1 | 1.0 | 2.5 |

Source: BC Stats

**Table 14. High Technology Sector Establishments,[1] by Development Region and Regional District, 2001-2004**

| Development Region / Regional District | | 2001 | | | 2002 | | | 2003 | | | 2004 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mfg | Service | Total | Mfg | Service | Total | Mfg | Service | Total | Mfg | Service | Total |
| **Vancouver Island/Coast** | | **101** | **1,196** | **1,297** | **110** | **1,221** | **1,331** | **107** | **1,233** | **1,340** | **107** | **1,248** | **1,355** |
| 23 | Alberni-Clayoquot | 2 | 24 | 26 | 2 | 24 | 26 | 2 | 21 | 23 | 3 | 21 | 24 |
| 17 | Capital | 61 | 778 | 839 | 66 | 807 | 873 | 62 | 807 | 869 | 59 | 784 | 843 |
| 45 | Central Coast | 0 | 2 | 2 | 0 | 3 | 3 | 0 | 4 | 4 | 0 | 3 | 3 |
| 25 | Comox-Strathcona | 14 | 111 | 125 | 16 | 101 | 117 | 17 | 105 | 122 | 16 | 123 | 139 |
| 19 | Cowichan Valley | 8 | 73 | 81 | 7 | 72 | 79 | 7 | 73 | 80 | 10 | 85 | 95 |
| 43 | Mount Waddington | 0 | 19 | 19 | 1 | 17 | 18 | 2 | 17 | 19 | 1 | 17 | 18 |
| 21 | Nanaimo | 16 | 172 | 188 | 18 | 177 | 195 | 17 | 188 | 205 | 18 | 195 | 213 |
| 27 | Powell River | 0 | 17 | 17 | 0 | 20 | 20 | 0 | 18 | 18 | 0 | 20 | 20 |
| **Mainland/Southwest** | | **589** | **5,096** | **5,685** | **565** | **5,004** | **5,569** | **548** | **5,065** | **5,613** | **557** | **5,107** | **5,664** |
| 09 | Fraser Valley | 31 | 168 | 199 | 35 | 162 | 197 | 26 | 178 | 204 | 29 | 165 | 194 |
| 15 | Greater Vancouver | 547 | 4,835 | 5,382 | 520 | 4,752 | 5,272 | 514 | 4,790 | 5,304 | 518 | 4,836 | 5,354 |
| 31 | Squamish-Lillooet | 5 | 60 | 65 | 4 | 57 | 61 | 3 | 59 | 62 | 3 | 60 | 63 |
| 29 | Sunshine Coast | 6 | 33 | 39 | 6 | 33 | 39 | 5 | 38 | 43 | 7 | 46 | 53 |
| **Thompson/Okanagan** | | **76** | **555** | **631** | **78** | **537** | **615** | **78** | **559** | **637** | **75** | **554** | **629** |
| 35 | Central Okanagan | 38 | 202 | 240 | 43 | 196 | 239 | 43 | 221 | 264 | 41 | 212 | 253 |
| 39 | Columbia-Shuswap | 3 | 63 | 66 | 2 | 57 | 59 | 4 | 57 | 61 | 3 | 61 | 64 |
| 37 | North Okanagan | 14 | 84 | 98 | 11 | 78 | 89 | 9 | 72 | 81 | 10 | 81 | 91 |
| 07 | Okanagan-Similkameen | 8 | 71 | 79 | 10 | 64 | 74 | 8 | 69 | 77 | 7 | 62 | 69 |
| 33 | Thompson-Nicola | 13 | 135 | 148 | 12 | 142 | 154 | 14 | 140 | 154 | 14 | 138 | 152 |
| **Kootenay** | | **22** | **185** | **207** | **18** | **182** | **200** | **18** | **187** | **205** | **16** | **189** | **205** |
| 03 | Central Kootenay | 9 | 92 | 101 | 8 | 85 | 93 | 8 | 84 | 92 | 7 | 84 | 91 |
| 01 | East Kootenay | 8 | 58 | 66 | 5 | 56 | 61 | 4 | 64 | 68 | 3 | 65 | 68 |
| 05 | Kootenay Boundary | 5 | 35 | 40 | 5 | 41 | 46 | 6 | 39 | 45 | 6 | 40 | 46 |
| **Cariboo** | | **27** | **189** | **216** | **23** | **176** | **199** | **17** | **166** | **183** | **19** | **156** | **175** |
| 41 | Cariboo | 7 | 69 | 76 | 7 | 66 | 73 | 5 | 62 | 67 | 5 | 66 | 71 |
| 53 | Fraser-Fort George | 20 | 120 | 140 | 16 | 110 | 126 | 12 | 104 | 116 | 14 | 90 | 104 |
| **North Coast** | | **3** | **50** | **53** | **3** | **54** | **57** | **3** | **44** | **47** | **2** | **43** | **45** |
| 49 | Kitimat-Stikine | 3 | 35 | 38 | 3 | 37 | 40 | 2 | 35 | 37 | 2 | 31 | 33 |
| 47 | Skeena-Queen Charlotte | 0 | 15 | 15 | 0 | 17 | 17 | 1 | 9 | 10 | 0 | 12 | 12 |
| **Nechako** | | **4** | **51** | **55** | **4** | **47** | **51** | **4** | **46** | **50** | **5** | **44** | **49** |
| 51 | Bulkley-Nechako | 4 | 51 | 55 | 4 | 47 | 51 | 4 | 46 | 50 | 5 | 43 | 48 |
| 57 | Stikine | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **Northeast** | | **4** | **118** | **122** | **8** | **129** | **137** | **7** | **136** | **143** | **7** | **141** | **148** |
| 55 | Peace River | 3 | 115 | 118 | 7 | 123 | 130 | 6 | 130 | 136 | 6 | 130 | 136 |
| 59 | Northern Rockies | 1 | 3 | 4 | 1 | 6 | 7 | 1 | 6 | 7 | 1 | 11 | 12 |
| **Total[2]** | | **826** | **7,444** | **8,270** | **809** | **7,355** | **8,164** | **783** | **7,443** | **8,226** | **789** | **7,499** | **8,288** |

1. Establishments with zero employees are not included in these figures.
2. Figures do not add to totals because some establishments did not have geographic codes.

Source: BC Stats and Statistics Canada

**Table 15. High Technology Sector Establishments,[1] by Industry, 1998-2004**

| Industry | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **Manufacturing Industries** | **838** | **871** | **859** | **826** | **809** | **783** | **789** |
| **Service Industries** | **5,952** | **6,471** | **7,167** | **7,444** | **7,355** | **7,443** | **7,499** |
| Motion picture production & post production | 583 | 667 | 793 | 851 | 864 | 859 | 877 |
| Telecommunications | 207 | 213 | 231 | 255 | 240 | 235 | 219 |
| Engineering services | 1,934 | 1,956 | 1,930 | 1,845 | 1,792 | 1,795 | 1,793 |
| Computer and related services | 2,000 | 2,316 | 2,801 | 2,967 | 2,879 | 2,925 | 2,908 |
| Other services | 1,228 | 1,319 | 1,412 | 1,526 | 1,580 | 1,629 | 1,702 |
| **High Technology Sector** | **6,790** | **7,342** | **8,026** | **8,270** | **8,164** | **8,226** | **8,288** |

| | % change from previous year | | | | | |
|---|---|---|---|---|---|---|
| **Industry** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** |
| **Manufacturing Industries** | **3.9** | **-1.4** | **-3.8** | **-2.1** | **-3.2** | **0.8** |
| **Service Industries** | **8.7** | **10.8** | **3.9** | **-1.2** | **1.2** | **0.8** |
| Motion picture production & post production | 14.4 | 18.9 | 7.3 | 1.5 | -0.6 | 2.1 |
| Telecommunications | 2.9 | 8.5 | 10.4 | -5.9 | -2.1 | -6.8 |
| Engineering services | 1.1 | -1.3 | -4.4 | -2.9 | 0.2 | -0.1 |
| Computer and related services | 15.8 | 20.9 | 5.9 | -3.0 | 1.6 | -0.6 |
| Other services | 7.4 | 7.1 | 8.1 | 3.5 | 3.1 | 4.5 |
| **High Technology Sector** | **8.1** | **9.3** | **3.0** | **-1.3** | **0.8** | **0.8** |

1. Establishments with zero employees are not included in these figures.

Source: BC Stats and Statistics Canada

**Table 16. High Technology Sector Establishments, by Industry and Establishment Size, 2004**

| | Number of establishments, by number of employees | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Industry** | **1 to 4** | **5 to 9** | **10 to 19** | **20 to 49** | **50 plus** | **Subtotal** | **None** | **Total** |
| **Manufacturing Industries** | **414** | **116** | **90** | **84** | **85** | **789** | **535** | **1,324** |
| **Service Industries** | **5,165** | **969** | **601** | **477** | **287** | **7,499** | **12,987** | **20,486** |
| Film, video and related | 600 | 146 | 70 | 40 | 21 | 877 | 1,888 | 2,765 |
| Telecommunications and related | 115 | 24 | 20 | 31 | 29 | 219 | 149 | 368 |
| Engineering services | 1,180 | 262 | 157 | 136 | 58 | 1,793 | 2,548 | 4,341 |
| Computer systems design | 2,111 | 306 | 217 | 160 | 114 | 2,908 | 5,635 | 8,543 |
| Other services | 1,159 | 231 | 137 | 110 | 65 | 1,702 | 2,767 | 4,469 |
| **Total for sector** | **5,579** | **1,085** | **691** | **561** | **372** | **8,288** | **13,522** | **21,810** |
| **Total for all Industries** | **90,606** | **28,127** | **19,371** | **12,962** | **7,355** | **158,421** | **187,895** | **346,316** |

Source: BC Stats and Statistics Canada

**Table 17. Shipments and Exports of BC High Technology Goods and Total Processed Goods, 1994-2004**

| | Value ($000,000) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| **High Technology Goods** | | | | | | | | | | | |
| Total Shipments[1] | 1,163 | 1,323 | 1,539 | 1,763 | 1,845 | 2,267 | 2,819 | 2,524 | 2,122 | 2,241 | 2,333 |
| Exports | 391 | 407 | 451 | 581 | 769 | 840 | 923 | 748 | 685 | 629 | 673 |
| Exports as % of Shipments | 33.6 | 30.8 | 29.3 | 33.0 | 41.7 | 37.1 | 32.7 | 29.6 | 32.3 | 28.0 | 28.8 |
| **Total Processed Goods** | | | | | | | | | | | |
| Total Shipments[1] | 30,333 | 34,207 | 32,932 | 33,496 | 31,757 | 36,679 | 40,699 | 38,303 | 38,512 | 37,243 | 42,344 |
| Exports of Processed Goods[2] | 19,207 | 22,826 | 21,255 | 21,782 | 20,874 | 23,955 | 25,175 | 22,869 | 22,532 | 20,806 | 23,632 |
| Export Orientation (%) | 63.3 | 66.7 | 64.5 | 65.0 | 65.7 | 65.3 | 61.9 | 59.7 | 58.5 | 55.9 | 55.8 |

| | % change from previous year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| **High Technology Goods** | | | | | | | | | | |
| Total Shipments | 13.7 | 16.3 | 14.6 | 4.7 | 22.9 | 24.3 | -10.5 | -15.9 | 5.6 | 4.1 |
| Exports | 4.1 | 10.8 | 29.0 | 32.3 | 9.2 | 9.9 | -19.0 | -8.5 | -8.2 | 7.1 |
| **Total Processed Goods** | | | | | | | | | | |
| Total Shipments | 12.8 | -3.7 | 1.7 | -5.2 | 15.5 | 11.0 | -5.9 | 0.5 | -3.3 | 13.7 |
| Exports of Processed Goods | 18.8 | -6.9 | 2.5 | -4.2 | 14.8 | 5.1 | -9.2 | -1.5 | -7.7 | 13.6 |

1. Total shipments represent revenues from all production, sales, services and related activities in the manufacturing sector.
2. "Processed goods" excludes selected agricultural, fish, logging, mining and energy products not produced by BC manufacturing industries.

Source: BC Stats and Statistics Canada

**Table 18. Domestic Exports of High Technology Goods, by Destination and Mode of Transport, 1994-2004**

**Value ($ million)[1]**

| Destination | Mode of Transport[2] | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **United States** | Land | 184.7 | 160.3 | 159.1 | 240.7 | 384.8 | 408.6 | 477.4 | 343.8 | 384.2 | 353.8 | 343.9 |
| | Sea | 0.5 | 1.7 | 1.7 | 5.6 | 3.4 | 5.2 | 1.5 | 1.4 | 0.0 | 0.0 | 0.0 |
| | Air | 85.4 | 124.4 | 127.9 | 168.1 | 208.4 | 266.2 | 294.1 | 251.2 | 173.9 | 149.2 | 157.2 |
| | **Total** | **270.6** | **286.4** | **288.7** | **414.4** | **596.6** | **680.0** | **773.0** | **596.4** | **558.1** | **503.0** | **501.2** |
| **Pacific Rim (total)** | Land | 6.6 | 7.1 | 12.3 | 14.9 | 8.5 | 6.8 | 0.4 | 1.0 | 7.5 | 4.4 | 1.1 |
| | Sea | 5.6 | 5.5 | 12.1 | 5.6 | 8.9 | 4.7 | 9.4 | 4.6 | 13.7 | 2.2 | 2.8 |
| | Air | 53.8 | 59.5 | 81.8 | 94.1 | 78.7 | 72.3 | 56.9 | 27.8 | 25.9 | 33.8 | 58.8 |
| | **Total** | **65.9** | **72.1** | **106.2** | **114.6** | **96.1** | **83.8** | **66.8** | **33.3** | **47.2** | **40.4** | **62.7** |
| **Japan** | Land | 1.8 | 2.2 | 3.1 | 2.7 | 0.0 | 0.4 | 0.1 | 0.3 | 4.5 | 1.7 | 0.3 |
| | Sea | 0.3 | 0.6 | 1.0 | 0.3 | 0.9 | 0.3 | 2.1 | 0.7 | 12.1 | 0.1 | 0.3 |
| | Air | 8.7 | 10.8 | 14.6 | 16.3 | 7.7 | 4.5 | 28.1 | 8.7 | 5.4 | 5.5 | 10.3 |
| | **Total** | **10.8** | **13.6** | **18.7** | **19.3** | **8.6** | **5.2** | **30.4** | **9.7** | **22.0** | **7.3** | **11.0** |
| **Pacific Rim (excluding Japan)** | Land | 4.8 | 4.9 | 9.2 | 12.2 | 8.5 | 6.4 | 0.3 | 0.7 | 3.1 | 2.7 | 0.8 |
| | Sea | 5.2 | 4.9 | 11.0 | 5.4 | 8.1 | 4.4 | 7.4 | 3.8 | 1.6 | 2.1 | 2.5 |
| | Air | 45.0 | 48.7 | 67.2 | 77.8 | 70.9 | 67.8 | 28.8 | 19.1 | 20.5 | 28.3 | 48.4 |
| | **Total** | **55.1** | **58.5** | **87.4** | **95.3** | **87.5** | **78.6** | **36.4** | **23.6** | **25.1** | **33.0** | **51.8** |
| **European Union[3]** | Land | 0.9 | 1.6 | 0.1 | 1.5 | 5.7 | 0.2 | 1.6 | 3.0 | 0.5 | 0.2 | 5.0 |
| | Sea | 4.4 | 0.1 | 2.4 | 1.1 | 1.5 | 4.6 | 1.2 | 8.3 | 5.3 | 7.9 | 8.3 |
| | Air | 29.4 | 31.1 | 27.1 | 30.8 | 51.4 | 48.8 | 57.4 | 76.1 | 52.4 | 42.5 | 49.7 |
| | **Total** | **34.7** | **32.9** | **29.6** | **33.4** | **58.5** | **53.7** | **60.2** | **87.5** | **58.1** | **50.6** | **63.1** |
| **All Other Countries** | Land | 1.9 | 0.8 | 1.7 | 1.5 | 0.7 | 1.6 | 2.1 | 7.1 | 1.6 | 1.3 | 2.3 |
| | Sea | 1.7 | 0.8 | 1.9 | 3.0 | 1.4 | 1.2 | 2.6 | 9.1 | 1.9 | 2.3 | 2.9 |
| | Air | 15.8 | 13.9 | 22.5 | 14.3 | 15.9 | 19.8 | 18.4 | 14.7 | 17.7 | 30.9 | 40.8 |
| | **Total** | **19.4** | **15.5** | **26.1** | **18.9** | **18.0** | **22.6** | **23.1** | **30.9** | **21.2** | **34.6** | **45.9** |
| **Total** | Land | 194.1 | 169.8 | 173.2 | 258.8 | 399.7 | 417.2 | 481.6 | 354.9 | 393.8 | 359.7 | 352.3 |
| | Sea | 12.2 | 8.1 | 18.1 | 15.3 | 15.2 | 15.7 | 14.7 | 23.4 | 20.9 | 12.4 | 14.1 |
| | Air | 184.4 | 228.9 | 259.4 | 307.3 | 354.4 | 407.2 | 426.7 | 369.8 | 269.9 | 256.5 | 306.5 |
| | **Total** | **390.7** | **406.8** | **450.6** | **581.4** | **769.2** | **840.1** | **923.1** | **748.1** | **684.6** | **628.5** | **672.9** |

**% of Exports to Destination[4]**

| Destination | Mode of Transport | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **United States** | Land | 68.2 | 56.0 | 55.1 | 58.1 | 64.5 | 60.1 | 61.8 | 57.6 | 68.8 | 70.3 | 68.6 |
| | Sea | 0.2 | 0.6 | 0.6 | 1.4 | 0.6 | 0.8 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 |
| | Air | 31.6 | 43.4 | 44.3 | 40.6 | 34.9 | 39.1 | 38.0 | 42.1 | 31.2 | 29.7 | 31.4 |
| **Pacific Rim (total)** | Land | 10.0 | 9.9 | 11.6 | 13.0 | 8.9 | 8.1 | 0.7 | 3.0 | 16.0 | 10.9 | 1.8 |
| | Sea | 8.5 | 7.6 | 11.4 | 4.9 | 9.3 | 5.6 | 14.1 | 13.7 | 29.1 | 5.4 | 4.5 |
| | Air | 81.5 | 82.5 | 77.1 | 82.1 | 81.8 | 86.3 | 85.2 | 83.3 | 54.9 | 83.7 | 93.7 |
| **Japan** | Land | 16.6 | 16.5 | 16.6 | 14.2 | 0.0 | 8.3 | 0.5 | 3.1 | 20.3 | 23.7 | 2.9 |
| | Sea | 3.0 | 4.4 | 5.5 | 1.3 | 10.0 | 5.1 | 6.8 | 7.7 | 55.1 | 1.5 | 2.8 |
| | Air | 80.3 | 79.1 | 77.9 | 84.5 | 89.9 | 86.6 | 92.7 | 89.2 | 24.6 | 74.7 | 94.4 |
| **Pacific Rim (excluding Japan)** | Land | 8.7 | 8.4 | 10.5 | 12.8 | 9.7 | 8.1 | 0.8 | 2.9 | 12.2 | 8.1 | 1.6 |
| | Sea | 9.5 | 8.3 | 12.6 | 5.6 | 9.2 | 5.6 | 20.2 | 16.2 | 6.4 | 6.3 | 4.8 |
| | Air | 81.8 | 83.3 | 76.9 | 81.6 | 81.0 | 86.3 | 78.9 | 81.0 | 81.5 | 85.7 | 93.6 |
| **European Union[3]** | Land | 2.5 | 5.0 | 0.4 | 4.6 | 9.7 | 0.5 | 2.7 | 3.5 | 0.8 | 0.3 | 8.0 |
| | Sea | 12.6 | 0.4 | 8.0 | 3.2 | 2.6 | 8.6 | 2.0 | 9.5 | 9.1 | 15.5 | 13.2 |
| | Air | 84.9 | 94.6 | 91.6 | 92.2 | 87.7 | 90.9 | 95.3 | 87.0 | 90.1 | 84.1 | 78.8 |
| **All Other Countries** | Land | 10.0 | 4.9 | 6.6 | 8.2 | 3.8 | 7.0 | 9.2 | 23.1 | 7.7 | 3.9 | 4.9 |
| | Sea | 8.7 | 5.3 | 7.2 | 16.0 | 7.6 | 5.3 | 11.2 | 29.5 | 8.7 | 6.7 | 6.3 |
| | Air | 81.3 | 89.8 | 86.1 | 75.8 | 88.6 | 87.8 | 79.6 | 47.4 | 83.6 | 89.4 | 88.8 |
| **Total** | Land | 49.7 | 41.7 | 38.4 | 44.5 | 52.0 | 49.7 | 52.2 | 47.4 | 57.5 | 57.2 | 52.4 |
| | Sea | 3.1 | 2.0 | 4.0 | 2.6 | 2.0 | 1.9 | 1.6 | 3.1 | 3.0 | 2.0 | 2.1 |
| | Air | 47.2 | 56.3 | 57.6 | 52.9 | 46.1 | 48.5 | 46.2 | 49.4 | 39.4 | 40.8 | 45.5 |

1. Totals may not equal the sum of Land, Sea and Air due to the fact that some respondents did not fill in the survey completely.
2. Shipments by land to overseas markets represent the export of BC produced high technology products transshipped by US Ports such as Seattle or Portland.
3. Prior to 1995, data for Slovenia were still included in the former Yugoslavia, therefore 1994 figures for the EU do not include Slovenia.
4. Percentages may not add to 100 due to rounding.

Source: BC Stats

### Table 19. Top 25 High Technology Export Commodities, 2004

| HS Code | Commodity Description [1] | Value ($000,000) | % Total Exports |
|---|---|---|---|
| 90181900 | Electro-diagnostic apparatus, nes | 111.4 | 16.6 |
| 90328900 | Automatic regulating or controlling instruments and apparatus, nes | 67.0 | 10.0 |
| 88033000 | Aircraft parts nes | 55.4 | 8.2 |
| 90191000 | Mechano-therapy appl; massage app; psychological aptitude-testing apparatus | 39.1 | 5.8 |
| 85252000 | Transmission apparatus, for radioteleph incorporating reception apparatus | 35.8 | 5.3 |
| 84733000 | Parts and accessories of automatic data processing machines & units thereof | 34.1 | 5.1 |
| 85254000 | Still image video cameras and other video camera recorders;digital cameras | 27.1 | 4.0 |
| 28444019 | Radioactive elements & isotopes and compounds, nes | 23.2 | 3.4 |
| 85243190 | Rec disc laser reading syst for repro phenomena o/t sound/image,o/t software,nes | 16.1 | 2.4 |
| 90148000 | Navigational instruments and appliances nes | 15.2 | 2.3 |
| 90213900 | Artificial parts of the body, nes | 12.2 | 1.8 |
| 84718000 | Other units for automatic data processing machines | 10.8 | 1.6 |
| 85253000 | Television cameras | 10.6 | 1.6 |
| 90304000 | Instruments and apparatus, specially designed for telecommunications nes | 10.1 | 1.5 |
| 85269200 | Radio remote control apparatus | 9.3 | 1.4 |
| 90158000 | Surveying, hydrographic, oceanographic, meteorological or geophysical inst nes | 9.2 | 1.4 |
| 90303900 | Inst & app, for measuring or checking voltage, current, etc w/o a record device | 9.1 | 1.4 |
| 85414000 | Photosensitive semiconductor devices, photovoltaic cells & light emit diodes | 8.9 | 1.3 |
| 84714100 | Other digital auto data process machines, o/t portable of HS 8471.30 | 8.6 | 1.3 |
| 85251000 | Transmission apparatus for radio-teleph radio-broadcasting or television | 8.5 | 1.3 |
| 84713000 | Portable digital auto data process machines weighing =10 kg with CPU, keyboard & di | 8.0 | 1.2 |
| 84715000 | Digital process units o/t 8471.41/49,w/n cntg in same housing storage/input/output | 7.6 | 1.1 |
| 84705000 | Cash registers | 6.6 | 1.0 |
| 90278000 | Instruments and apparatus for physical or chemical analysis, nes | 6.0 | 0.9 |
| 84714900 | Other digital automatic data processing machines, presented in the form of systems | 5.9 | 0.9 |
| **Subtotal** | | **555.8** | **82.6** |
| | All Other High Technology Commodities | 117.1 | 17.4 |
| **Total** | | **672.9** | **100.0** |

HS code = Harmonized System commodity code; NES=Not Elsewhere Specified
1. Commodity descriptions are drawn from the approved Harmonized System coding manual.
They contain abbreviations that have been left in the original form in this table.

Source: BC Stats and Statistics Canada

### Table 20. Top 25 High Technology Import Commodities, 2004

| HS Code | Commodity Description [1] | Value ($000,000) | % Total Imports |
|---|---|---|---|
| 3004900079 | Medicaments nes, for human use, in dosage | 183.8 | 4.7 |
| 8471300000 | Portable digital auto data process mach, not more than 10 kg, w CPU, keybrd & display | 171.3 | 4.4 |
| 8802400014 | Airplanes,passenger, non military, of an unladen weight >15000kg,new | 159.8 | 4.1 |
| 8473302000 | Printed circuit assemblies of the machines of heading 84.71[2] | 157.1 | 4.0 |
| 8471500090 | Digital process units, o/t 8471.41/49, w/n cntg strg,input/output o/t w CRT, nes | 154.9 | 3.9 |
| 8525200092 | Cellular telephones other than designed for installation in motor vehicles | 134.4 | 3.4 |
| 8803300000 | Parts of airplanes or helicopters nes | 118.9 | 3.0 |
| 8525400010 | Still image video cameras and other video camera recorders, colour | 117.3 | 3.0 |
| 8517901030 | Parts, printed circuit asy, of goods of TI 8517.11.00, 8517.19.10 , 8517.19.90,etc[3] | 97.4 | 2.5 |
| 8473309000 | Pts & access (o/t printed circuit assy) of the machines of heading 84.71, nes | 95.9 | 2.4 |
| 8471801000 | Control or adapter units, o/t form of system | 94.4 | 2.4 |
| 8521901000 | Laser video disc players, w/n incorp video tuner | 73.6 | 1.9 |
| 8524391000 | Recorded discs (software),for reproducing image only, other than magnetic, nes | 53.8 | 1.4 |
| 8473301000 | Pts, o/t printed circuit asy, of printers w/n cntg storage units in same housing | 53.0 | 1.4 |
| 8542219011 | Unmounted chips, dice and wafers, silicon, metal oxide semicon (MOS) | 52.9 | 1.3 |
| 8471603900 | Other display units, other than system, nes | 47.3 | 1.2 |
| 8471700013 | Other hard magnetic disk drive units, o/t presented in form of system | 44.9 | 1.1 |
| 9018909080 | Instruments & appliances used in medical, surgical, dental/veterinary science, nes | 44.7 | 1.1 |
| 8471491090 | Digital process units,w/n cntg in same hsng,strg unit,in/output,o/t with CRT,nes | 42.9 | 1.1 |
| 9032891029 | Process cntl app, excl sensors, which convert analog sgnl from/to digital, nes | 35.7 | 0.9 |
| 8524310011 | Rec magnetic discs, software, prepackd,for aut data processing mach, sold retail | 34.7 | 0.9 |
| 8524399000 | Recorded discs (o/t software), for reproducing image only, o/t magnetic, nes | 34.0 | 0.9 |
| 8517901040 | Printed circuit assemblies of goods of TI 8517.22.00, 8517.30.20, 8517.50.49, 8517.80.2 | 33.8 | 0.9 |
| 8528129500 | Colour non-high definition tv rece , proj type, with cathode ray tube, etc | 33.3 | 0.8 |
| 8528129600 | Colour television receivers, with flat panel screen, nes | 32.3 | 0.8 |
| **Subtotal** | | **2,102.2** | **53.6** |
| | All Other High Technology Commodities | 1,822.3 | 46.4 |
| **Total** | | **3,924.6** | **100.0** |

HS code = Harmonized System commodity code; NES=Not Elsewhere Specified
1. Commodity descriptions are drawn from the approved Harmonized System coding manual.
They contain abbreviations that have been left in the original form in this table.
2. Refers to automatic data processing machines, magnetic or optical readers, etc.
3. Refers to telephone sets, videophones.
4. Refers to teleprinters, telegraphic switching apparatus, other telegraphic apparatus

Source: BC Stats and Statistics Canada

**Table 21. Domestic Exports of High Technology Goods and Total Goods, by Destination 1994-2004**

| | Value ($000,000) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| **High Technology Exports** | | | | | | | | | | | |
| United States | 270.6 | 286.4 | 288.7 | 414.4 | 596.6 | 680.0 | 773.0 | 596.4 | 558.1 | 503.0 | 501.2 |
| Mexico | 0.8 | 1.1 | 0.9 | 0.6 | 1.1 | 3.1 | 0.9 | 0.9 | 1.7 | 1.7 | 3.6 |
| European Union[2] | 34.7 | 32.9 | 29.6 | 33.4 | 58.5 | 53.7 | 60.2 | 87.5 | 58.1 | 50.6 | 63.1 |
| *United Kingdom* | *8.1* | *6.1* | *8.7* | *7.9* | *6.9* | *6.9* | *13.0* | *20.4* | *21.9* | *16.0* | *19.1* |
| *France* | *2.6* | *4.6* | *2.6* | *5.9* | *6.6* | *6.7* | *1.5* | *5.3* | *4.0* | *4.7* | *9.4* |
| *Germany* | *6.2* | *5.0* | *5.0* | *4.5* | *13.7* | *6.2* | *5.2* | *7.1* | *7.3* | *7.9* | *9.2* |
| *Italy* | *0.5* | *0.8* | *3.2* | *0.6* | *2.5* | *2.2* | *18.5* | *31.6* | *2.9* | *3.6* | *4.6* |
| *Netherlands* | *5.5* | *6.8* | *3.2* | *8.2* | *11.3* | *9.1* | *5.0* | *5.2* | *2.8* | *3.3* | *5.7* |
| Pacific Rim | 65.9 | 72.1 | 106.2 | 114.6 | 96.1 | 83.8 | 66.8 | 33.3 | 47.2 | 40.4 | 62.7 |
| *Hong Kong* | *20.2* | *25.8* | *13.6* | *21.9* | *32.0* | *12.0* | *6.5* | *6.2* | *3.3* | *4.9* | *9.0* |
| *PR China* | *4.4* | *3.3* | *16.4* | *20.1* | *27.1* | *17.7* | *2.3* | *3.0* | *4.1* | *10.3* | *14.4* |
| *Japan* | *10.8* | *13.6* | *18.7* | *19.3* | *8.6* | *5.2* | *30.4* | *9.7* | *22.0* | *7.3* | *11.0* |
| *South Korea* | *10.4* | *8.1* | *8.7* | *16.7* | *4.6* | *11.9* | *9.1* | *6.2* | *4.3* | *2.2* | *7.2* |
| *Taiwan* | *3.1* | *4.0* | *8.7* | *12.2* | *14.9* | *24.2* | *4.3* | *2.2* | *4.3* | *5.8* | *3.1* |
| All Other Countries | 18.6 | 14.3 | 25.2 | 18.3 | 16.9 | 19.4 | 22.1 | 30.0 | 19.5 | 32.9 | 42.3 |
| **Total** | **390.7** | **406.8** | **450.6** | **581.4** | **769.2** | **840.1** | **923.1** | **748.1** | **684.6** | **628.5** | **672.9** |
| **Total Exports** | | | | | | | | | | | |
| United States | 12,321.6 | 13,288.0 | 13,895.1 | 14,863.1 | 16,375.0 | 19,370.7 | 22,197.6 | 22,104.4 | 19,665.8 | 18,792.3 | 20,121.3 |
| Mexico | 77.1 | 54.6 | 50.5 | 61.9 | 60.7 | 42.2 | 57.7 | 83.2 | 79.0 | 107.3 | 199.3 |
| European Union[2] | 1,972.8 | 2,887.4 | 1,973.5 | 2,080.7 | 2,016.2 | 1,931.1 | 2,581.5 | 2,137.3 | 1,817.4 | 1,845.2 | 2,140.7 |
| *United Kingdom* | *328.1* | *377.7* | *336.4* | *288.7* | *302.5* | *319.2* | *381.2* | *355.0* | *337.0* | *302.4* | *340.1* |
| *France* | *169.2* | *317.6* | *182.3* | *183.5* | *175.8* | *167.1* | *217.0* | *167.9* | *149.7* | *161.9* | *177.5* |
| *Germany* | *474.5* | *694.4* | *409.1* | *475.6* | *395.6* | *299.7* | *534.5* | *382.4* | *320.9* | *364.3* | *415.5* |
| *Italy* | *412.1* | *646.1* | *435.5* | *474.1* | *439.1* | *445.6* | *617.1* | *532.8* | *428.6* | *460.7* | *457.5* |
| *Netherlands* | *101.0* | *184.8* | *164.1* | *204.3* | *251.5* | *235.3* | *174.6* | *211.9* | *222.8* | *227.8* | *324.9* |
| Pacific Rim | 7,953.8 | 9,857.5 | 9,226.4 | 9,023.7 | 6,969.7 | 7,179.8 | 8,176.9 | 6,582.5 | 6,528.8 | 6,598.4 | 7,559.9 |
| *Hong Kong* | *192.5* | *270.6* | *258.3* | *352.0* | *272.2* | *280.7* | *299.0* | *217.8* | *207.7* | *179.6* | *260.7* |
| *PR China* | *306.5* | *500.6* | *514.1* | *455.5* | *464.5* | *593.2* | *740.7* | *726.8* | *756.3* | *907.8* | *1,301.0* |
| *Japan* | *5,701.8* | *6,764.6* | *6,403.8* | *6,003.4* | *4,548.5* | *4,468.3* | *4,890.8* | *4,066.1* | *3,858.5* | *3,649.4* | *3,802.2* |
| *South Korea* | *743.1* | *979.5* | *866.1* | *953.2* | *678.0* | *754.6* | *930.4* | *712.2* | *725.1* | *772.1* | *914.0* |
| *Taiwan* | *361.0* | *482.0* | *354.3* | *457.3* | *399.6* | *375.9* | *421.9* | *314.9* | *339.3* | *428.1* | *482.2* |
| All Other Countries | 568.8 | 805.7 | 619.4 | 731.3 | 623.5 | 589.5 | 738.5 | 772.2 | 737.3 | 848.5 | 1,022.8 |
| **Total** | **22,894.1** | **26,893.1** | **25,764.8** | **26,760.7** | **26,045.1** | **29,113.3** | **33,752.2** | **31,679.7** | **28,828.4** | **28,191.7** | **31,044.0** |

| | % change from previous year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| **High Technology Exports** | | | | | | | | | | |
| United States | 5.8 | 0.8 | 43.5 | 44.0 | 14.0 | 13.7 | -22.8 | -6.4 | -9.9 | -0.4 |
| Mexico | 50.0 | -21.5 | -32.2 | 76.5 | 191.4 | -69.9 | -5.8 | 93.4 | -1.1 | 108.8 |
| European Union[2] | -5.2 | -9.9 | 12.8 | 75.3 | -8.2 | 12.2 | 45.2 | -33.6 | -13.0 | 24.7 |
| *United Kingdom* | *-24.9* | *44.0* | *-9.0* | *-13.1* | *0.2* | *87.7* | *57.4* | *7.3* | *-26.8* | *19.0* |
| *France* | *75.3* | *-42.4* | *125.2* | *11.5* | *0.8* | *-77.6* | *253.7* | *-24.1* | *17.3* | *99.9* |
| *Germany* | *-18.5* | *0.3* | *-10.1* | *201.7* | *-54.4* | *-15.9* | *34.8* | *3.4* | *8.1* | *16.2* | |
| *Italy* | *58.4* | *278.4* | *-82.7* | *355.6* | *-11.3* | *725.8* | *70.8* | *-90.7* | *23.2* | *26.7* | |
| *Netherlands* | *22.8* | *-52.8* | *156.4* | *37.1* | *-19.4* | *-44.6* | *4.2* | *-45.9* | *15.0* | *74.2* | |
| Pacific Rim | 9.3 | 47.3 | 8.0 | -16.1 | -12.8 | -20.3 | -50.1 | 41.5 | -14.4 | 55.4 | |
| *Hong Kong* | *27.8* | *-47.1* | *60.8* | *46.3* | *-62.4* | *-45.7* | *-5.2* | *-46.3* | *46.4* | *85.1* | |
| *People's Republic of China* | *-25.8* | *400.6* | *23.1* | *34.9* | *-34.9* | *-87.0* | *29.5* | *36.6* | *152.5* | *39.6* | |
| *Japan* | *25.5* | *37.6* | *2.9* | *-55.4* | *-31.5* | *483.0* | *-68.0* | *127.1* | *-66.6* | *49.0* | |
| *South Korea* | *-22.1* | *6.5* | *92.6* | *-72.2* | *15.9* | *-23.9* | *-31.5* | *-31.5* | *-49.2* | *231.6* | |
| *Taiwan* | *28.6* | *115.0* | *40.7* | *21.6* | *6.7* | *-82.4* | *-48.1* | *94.4* | *34.2* | *-46.0* | |
| All Other Countries | -23.2 | 75.9 | -27.4 | -7.6 | 14.9 | 13.9 | 35.8 | -35.2 | 69.0 | 28.7 | |
| **Total Growth** | **4.1** | **10.8** | **29.0** | **32.3** | **3.2** | **9.9** | **-19.0** | **-8.5** | **-8.2** | **7.1** | |
| **Total Exports** | | | | | | | | | | |
| United States | 7.8 | 4.6 | 7.0 | 10.2 | 18.3 | 14.6 | -0.4 | -11.0 | -4.4 | 7.1 | |
| Mexico | -29.3 | -7.5 | 22.8 | -2.0 | -30.5 | 36.7 | 44.3 | -5.1 | 35.8 | 85.8 | |
| European Union[2] | 46.4 | -31.7 | 5.4 | -3.1 | -4.2 | 33.7 | -17.2 | -15.0 | 1.5 | 16.0 | |
| *United Kingdom* | *15.1* | *-10.9* | *-14.2* | *4.8* | *5.5* | *19.4* | *-6.9* | *-5.1* | *-10.3* | *12.4* | |
| *France* | *87.8* | *-42.6* | *0.6* | *-4.2* | *-4.9* | *29.9* | *-22.6* | *-10.9* | *8.1* | *9.7* | |
| *Germany* | *46.4* | *-41.1* | *16.2* | *-16.8* | *-24.2* | *78.4* | *-28.5* | *-16.1* | *13.5* | *14.1* | |
| *Italy* | *56.8* | *-32.6* | *8.9* | *-7.4* | *1.5* | *38.5* | *-13.7* | *-19.6* | *7.5* | *-0.7* | |
| *Netherlands* | *83.0* | *-11.2* | *24.6* | *23.1* | *-6.4* | *-25.8* | *21.3* | *5.1* | *2.3* | *42.6* | |
| Pacific Rim | 23.9 | -6.4 | -2.2 | -22.8 | 3.0 | 13.9 | -19.5 | -0.8 | 1.1 | 14.6 | |
| *Hong Kong* | *40.6* | *-4.5* | *36.3* | *-22.7* | *3.1* | *6.5* | *-27.2* | *-4.6* | *-13.5* | *45.2* | |
| *People's Republic of China* | *63.3* | *2.7* | *-11.4* | *2.0* | *27.7* | *24.9* | *-1.9* | *4.1* | *20.0* | *43.3* | |
| *Japan* | *18.6* | *-5.3* | *-6.3* | *-24.2* | *-1.8* | *9.5* | *-16.9* | *-5.1* | *-5.4* | *4.2* | |
| *South Korea* | *31.8* | *-11.6* | *10.1* | *-28.9* | *11.3* | *23.3* | *-23.5* | *1.8* | *6.5* | *18.4* | |
| *Taiwan* | *33.5* | *-26.5* | *29.1* | *-12.6* | *-5.9* | *12.2* | *-25.4* | *7.8* | *26.2* | *12.6* | |
| All Other Countries | 41.6 | -23.1 | 18.1 | -14.7 | -5.4 | 25.3 | 4.6 | -4.5 | 15.1 | 20.5 | |
| **Total Growth** | **17.5** | **-4.2** | **3.9** | **-2.7** | **11.8** | **15.9** | **-6.1** | **-9.0** | **-2.2** | **10.1** | |

1. High technology exports reflect exports of high technology commodities produced by the manufacturing portion of the high technology sector; exports from the high technology service industries are not included.
2. Prior to 1995, data for Slovenia were still included in the former Yugoslavia, therefore 1994 figures for the EU do not include Slovenia.

Source: BC Stats and Statistics Canada

### Table 22. Imports of High Technology, by Country of Origin, 1994-2004

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **High Technology Imports** | | | | | | | | | | | |
| United States | 1,625.8 | 1,627.4 | 1,740.0 | 2,103.6 | 2,319.2 | 2,305.6 | 2,386.0 | 2,232.6 | 1,913.9 | 1,723.8 | 1,704.1 |
| Mexico | 52.3 | 60.5 | 72.6 | 84.5 | 88.7 | 126.3 | 169.4 | 203.9 | 216.0 | 217.1 | 277.9 |
| European Union[1] | 260.7 | 258.9 | 306.3 | 511.1 | 499.9 | 668.4 | 658.0 | 779.3 | 744.1 | 554.1 | 473.6 |
| *United Kingdom* | *71.8* | *81.7* | *84.5* | *89.2* | *102.6* | *144.0* | *324.2* | *165.8* | *138.5* | *126.4* | *131.8* |
| *France* | *67.6* | *57.0* | *109.2* | *284.1* | *243.5* | *360.9* | *145.9* | *360.1* | *314.9* | *180.2* | *120.1* |
| *Germany* | *44.1* | *45.9* | *49.5* | *49.9* | *58.5* | *69.1* | *70.7* | *106.7* | *88.8* | *81.0* | *97.4* |
| *Italy* | *24.7* | *20.7* | *9.4* | *13.5* | *13.9* | *11.0* | *11.4* | *35.7* | *69.2* | *53.9* | *23.7* |
| *Netherlands* | *8.1* | *8.5* | *7.9* | *7.1* | *7.9* | *8.4* | *12.7* | *17.9* | *32.1* | *13.9* | *12.6* |
| Pacific Rim | 625.5 | 690.7 | 608.0 | 830.8 | 913.9 | 936.7 | 977.6 | 915.7 | 942.3 | 1,066.8 | 1,281.5 |
| *Hong Kong* | *18.3* | *20.2* | *13.7* | *20.4* | *17.6* | *20.7* | *18.8* | *13.1* | *10.6* | *10.4* | *7.0* |
| *PR China* | *21.3* | *27.6* | *32.5* | *46.0* | *53.6* | *71.2* | *101.2* | *144.7* | *208.1* | *316.9* | *476.0* |
| *Japan* | *248.0* | *281.0* | *232.5* | *303.7* | *319.6* | *320.5* | *316.1* | *272.0* | *246.6* | *235.9* | *244.7* |
| *South Korea* | *82.8* | *100.5* | *69.0* | *80.0* | *75.7* | *77.3* | *99.5* | *86.3* | *85.6* | *117.7* | *135.1* |
| *Taiwan* | *76.9* | *68.3* | *76.7* | *123.0* | *160.7* | *175.2* | *165.4* | *157.6* | *143.2* | *114.1* | *119.8* |
| All Other Countries | 122.7 | 119.8 | 116.1 | 128.8 | 156.4 | 212.4 | 284.0 | 349.1 | 248.7 | 179.1 | 187.4 |
| **Total Value** | **2,687.0** | **2,757.2** | **2,842.9** | **3,658.8** | **3,978.1** | **4,249.3** | **4,475.0** | **4,480.6** | **4,065.0** | **3,740.9** | **3,924.6** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| **High Technology Imports** | | | | | | | | | | |
| United States | 0.1 | 6.9 | 20.9 | 10.3 | -0.6 | 3.5 | -6.4 | -14.3 | -9.9 | -1.1 |
| Mexico | 15.5 | 20.0 | 16.5 | 5.0 | 42.3 | 34.1 | 20.4 | 6.0 | 0.5 | 28.0 |
| European Union[1] | -0.7 | 18.3 | 66.9 | -2.2 | 33.7 | -1.6 | 18.4 | -4.5 | -25.5 | -14.5 |
| *United Kingdom* | *13.9* | *3.3* | *5.6* | *15.0* | *40.4* | *125.1* | *-48.9* | *-16.4* | *-8.7* | *4.2* |
| *France* | *-15.7* | *91.5* | *160.3* | *-14.3* | *48.2* | *-59.6* | *146.8* | *-12.5* | *-42.8* | *-33.3* |
| *Germany* | *4.0* | *8.0* | *0.8* | *17.1* | *18.1* | *2.4* | *50.8* | *-16.7* | *-8.9* | *20.3* |
| *Italy* | *-16.0* | *-54.9* | *44.4* | *3.2* | *-21.2* | *3.3* | *214.8* | *93.8* | *-22.2* | *-56.0* |
| *Netherlands* | *4.8* | *-7.0* | *-10.7* | *11.4* | *6.5* | *50.5* | *41.5* | *79.6* | *-56.7* | *-9.7* |
| Pacific Rim | 10.4 | -12.0 | 36.6 | 10.0 | 2.5 | 4.4 | -6.3 | 2.9 | 13.2 | 20.1 |
| *Hong Kong* | *10.0* | *-32.3* | *49.5* | *-13.9* | *17.8* | *-9.4* | *-30.2* | *-19.3* | *-1.6* | *-32.7* |
| *PR China* | *29.4* | *17.9* | *41.5* | *16.4* | *32.9* | *42.1* | *42.9* | *43.9* | *52.3* | *50.2* |
| *Japan* | *13.3* | *-17.2* | *30.6* | *5.2* | *0.3* | *-1.4* | *-14.0* | *-9.3* | *-4.4* | *3.7* |
| *South Korea* | *21.4* | *-31.4* | *15.9* | *-5.4* | *2.2* | *28.7* | *-13.2* | *-0.8* | *37.5* | *14.8* |
| *Taiwan* | *-11.2* | *12.4* | *60.3* | *30.6* | *9.0* | *-5.6* | *-4.7* | *-9.1* | *-20.4* | *5.1* |
| All Other Countries | -2.3 | -3.1 | 11.0 | 21.4 | 35.8 | 33.7 | 22.9 | -28.8 | -28.0 | 4.7 |
| **Total Growth** | **2.6** | **3.1** | **28.7** | **8.7** | **6.8** | **5.3** | **0.1** | **-9.3** | **-8.0** | **4.9** |

1. Prior to 1995, data for Slovenia were still included in the former Yugoslavia, therefore 1994 figures for the EU do not include Slovenia.

Source: BC Stats

### Table 23. Balance of Trade in High Technology Goods, by Country, 1994-2004

Balance ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **High Technology Commodities** | | | | | | | | | | | |
| United States | -1,284.0 | -1,189.0 | -1,247.6 | -1,497.3 | -1,468.1 | -1,228.2 | -814.2 | -1,364.5 | -1,120.2 | -999.2 | -972.0 |
| Mexico | -51.6 | -59.3 | -71.6 | -83.9 | -87.6 | -122.9 | -168.4 | -202.7 | -212.4 | -213.6 | -270.9 |
| European Union[1] | -222.3 | -221.6 | -271.2 | -468.7 | -432.0 | -596.1 | -546.4 | -661.4 | -662.6 | -468.2 | -366.5 |
| *United Kingdom* | *-62.9* | *-74.9* | *-73.1* | *-78.1* | *-93.0* | *-133.8* | *-299.1* | *-121.9* | *-106.3* | *-95.9* | *-90.7* |
| *France* | *-64.5* | *-52.0* | *-105.9* | *-276.3* | *-234.7* | *-345.3* | *-128.6* | *-354.2* | *-309.6* | *-175.1* | *-107.3* |
| *Germany* | *-36.6* | *-38.6* | *-43.5* | *-43.5* | *-43.4* | *-60.2* | *-55.0* | *-98.4* | *-75.4* | *-68.2* | *-83.5* |
| *Italy* | *-24.1* | *-19.8* | *-6.1* | *-12.7* | *-11.2* | *-8.5* | *7.2* | *-1.4* | *-65.0* | *-49.9* | *-18.5* |
| *Netherlands* | *-2.4* | *-1.3* | *-4.4* | *1.3* | *4.3* | *1.7* | *-7.6* | *-12.6* | *-29.0* | *-8.3* | *-6.2* |
| Pacific Rim | -543.2 | -601.6 | -484.2 | -686.3 | -779.5 | -793.9 | -758.9 | -805.7 | -837.8 | -905.6 | -1,046.3 |
| *Hong Kong* | *7.7* | *8.8* | *4.7* | *7.6* | *30.7* | *10.9* | *39.2* | *28.3* | *13.5* | *26.8* | *39.8* |
| *PR China* | *-16.0* | *-24.3* | *-16.1* | *-25.7* | *-25.7* | *-52.1* | *-88.4* | *-134.5* | *-200.7* | *-284.6* | *-447.2* |
| *Japan* | *-236.1* | *-256.9* | *-207.8* | *-275.9* | *-304.3* | *-303.3* | *-244.3* | *-246.7* | *-209.7* | *-206.5* | *-211.0* |
| *South Korea* | *-72.0* | *-90.9* | *-55.9* | *-58.7* | *-67.8* | *-55.3* | *-80.5* | *-75.6* | *-76.2* | *-108.8* | *-113.3* |
| *Taiwan* | *-73.1* | *-63.2* | *-67.6* | *-109.5* | *-140.3* | *-147.2* | *-156.4* | *-151.6* | *-137.9* | *-106.2* | *-110.1* |
| All Other Countries | -100.9 | -101.2 | -82.8 | -106.1 | -137.5 | -186.2 | -249.7 | -311.0 | -222.9 | -139.7 | -119.1 |
| **Total** | **-2,202.0** | **-2,172.7** | **-2,157.4** | **-2,842.3** | **-2,904.7** | **-2,927.3** | **-2,537.5** | **-3,345.2** | **-3,056.0** | **-2,726.4** | **-2,774.7** |

Note: The trade balance is the net of *total* exports minus total imports. Total exports include re-exports, whereas *domestic* exports are shipments of goods produced within Canada only (in the case of tables in this report, within BC only).

1. Prior to 1995, data for Slovenia were still included in the former Yugoslavia, therefore 1994 figures for the EU do not include Slovenia.

Source: BC Stats

### Table 24. Domestic Exports of High Technology Goods, by Commodity Group, 1994-2004

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 1.4 | 2.0 | 0.8 | 1.0 | 2.2 | 2.4 | 1.5 | 1.6 | 1.7 | 2.0 | 4.3 |
| Life Sciences | 23.3 | 26.1 | 30.5 | 46.0 | 55.3 | 69.4 | 82.0 | 94.8 | 186.2 | 201.5 | 210.6 |
| Opto-Electronics | 17.7 | 22.4 | 24.7 | 35.6 | 51.4 | 91.5 | 167.5 | 121.1 | 70.9 | 35.3 | 34.0 |
| Computers and Telecommunications | 260.8 | 236.5 | 292.0 | 374.3 | 443.2 | 399.9 | 318.6 | 259.8 | 262.3 | 235.7 | 246.6 |
| Electronics | 12.7 | 12.3 | 17.5 | 17.1 | 13.0 | 9.5 | 14.2 | 18.1 | 4.6 | 4.1 | 8.9 |
| Computer Integrated Manufacturing | 27.7 | 33.4 | 32.0 | 37.4 | 40.8 | 44.5 | 51.6 | 56.3 | 47.5 | 62.5 | 97.4 |
| Material Design | 22.6 | 18.5 | 0.9 | 13.7 | 57.7 | 94.0 | 178.6 | 71.0 | 3.2 | 1.5 | 1.4 |
| Aerospace | 23.5 | 53.1 | 50.6 | 52.4 | 101.2 | 126.6 | 102.9 | 118.9 | 104.5 | 83.9 | 68.2 |
| Weapons and Nuclear | 1.0 | 2.4 | 1.5 | 4.0 | 4.4 | 2.3 | 6.3 | 6.5 | 3.9 | 2.1 | 1.5 |
| **Total** | **390.7** | **406.8** | **450.6** | **581.4** | **769.2** | **840.1** | **923.1** | **748.1** | **684.6** | **628.5** | **672.9** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 45.8 | -60.1 | 21.6 | 128.5 | 8.9 | -37.9 | 5.0 | 5.7 | 19.6 | 112.0 |
| Life Sciences | 11.9 | 16.7 | 50.8 | 20.3 | 25.5 | 18.1 | 15.7 | 96.3 | 8.2 | 4.5 |
| Opto-Electronics | 26.2 | 10.2 | 44.5 | 44.4 | 78.0 | 82.9 | -27.7 | -41.5 | -50.3 | -3.6 |
| Computers and Telecommunications | -9.3 | 23.5 | 28.2 | 18.4 | -9.8 | -20.3 | -18.5 | 0.9 | -10.1 | 4.6 |
| Electronics | -2.9 | 42.4 | -2.4 | -23.8 | -26.8 | 48.5 | 27.6 | -74.7 | -9.7 | 114.3 |
| Computer Integrated Manufacturing | 20.8 | -4.1 | 16.8 | 9.1 | 9.1 | 15.9 | 9.2 | -15.7 | 31.6 | 55.9 |
| Material Design | -18.0 | -94.9 | 1351.2 | 321.9 | 63.0 | 90.0 | -60.3 | -95.5 | -53.1 | -2.5 |
| Aerospace | 126.1 | -4.7 | 3.5 | 93.2 | 25.1 | -18.7 | 15.6 | -12.1 | -19.7 | -18.7 |
| Weapons and Nuclear | 138.5 | -37.6 | 159.2 | 10.2 | -47.8 | 178.5 | 2.0 | -40.2 | -45.9 | -28.7 |
| **Total** | **4.1** | **10.8** | **29.0** | **32.3** | **9.2** | **9.9** | **-19.0** | **-8.5** | **-8.2** | **7.1** |

Source: BC Stats

### Table 25. Imports of High Technology Goods, by Commodity Group, 1994-2004

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 17.4 | 21.7 | 24.6 | 21.6 | 32.5 | 33.8 | 33.7 | 57.6 | 53.3 | 55.2 | 49.2 |
| Life Sciences | 228.5 | 253.6 | 267.6 | 276.1 | 313.9 | 367.5 | 448.6 | 506.7 | 528.2 | 555.0 | 578.8 |
| Opto-Electronics | 71.3 | 72.8 | 78.1 | 96.3 | 97.4 | 93.6 | 121.8 | 123.7 | 104.6 | 94.3 | 112.6 |
| Computers and Telecommunications | 1,438.3 | 1,464.2 | 1,463.1 | 1,940.3 | 2,132.9 | 2,087.3 | 2,432.6 | 2,340.0 | 2,177.3 | 2,120.4 | 2,321.0 |
| Electronics | 397.6 | 476.7 | 371.7 | 545.2 | 680.0 | 676.9 | 547.7 | 333.4 | 228.0 | 203.4 | 249.3 |
| Computer Integrated Manufacturing | 168.4 | 154.5 | 145.2 | 183.3 | 133.8 | 153.0 | 186.9 | 166.3 | 162.6 | 169.5 | 162.1 |
| Material Design | 29.0 | 27.8 | 31.0 | 33.2 | 62.5 | 141.0 | 133.0 | 83.1 | 29.9 | 21.7 | 22.1 |
| Aerospace | 305.7 | 256.2 | 427.0 | 532.7 | 501.1 | 672.0 | 539.6 | 835.3 | 752.5 | 493.4 | 396.8 |
| Weapons and Nuclear | 30.8 | 29.7 | 34.7 | 30.2 | 24.1 | 24.2 | 31.2 | 34.5 | 28.6 | 28.0 | 32.7 |
| **Total** | **2,687.0** | **2,757.2** | **2,842.9** | **3,658.8** | **3,978.1** | **4,249.3** | **4,475.0** | **4,480.6** | **4,065.0** | **3,740.9** | **3,924.6** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 25.0 | 13.2 | -12.3 | 50.6 | 4.2 | -0.4 | 71.0 | -7.4 | 3.5 | -11.0 |
| Life Sciences | 11.0 | 5.5 | 3.2 | 13.7 | 17.1 | 22.1 | 13.0 | 4.2 | 5.1 | 4.3 |
| Opto-Electronics | 2.0 | 7.2 | 23.3 | 1.2 | -3.9 | 30.0 | 1.6 | -15.5 | -9.8 | 19.5 |
| Computers and Telecommunications | 1.8 | -0.1 | 32.6 | 9.9 | -2.1 | 16.5 | -3.8 | -7.0 | -2.6 | 9.5 |
| Electronics | 19.9 | -22.0 | 46.7 | 24.7 | -0.5 | -19.1 | -39.1 | -31.6 | -10.8 | 22.5 |
| Computer Integrated Manufacturing | -8.3 | -6.0 | 26.2 | -27.0 | 14.3 | 22.1 | -11.0 | -2.2 | 4.2 | -4.4 |
| Material Design | -4.0 | 11.3 | 7.0 | 88.5 | 125.5 | -5.7 | -37.5 | -64.1 | -27.3 | 1.6 |
| Aerospace | -16.2 | 66.7 | 24.7 | -5.9 | 34.1 | -19.7 | 54.8 | -9.9 | -34.4 | -19.6 |
| Weapons and Nuclear | -3.7 | 16.7 | -12.9 | -20.1 | 0.3 | 29.1 | 10.6 | -17.2 | -2.1 | 16.8 |
| **Total** | **2.6** | **3.1** | **28.7** | **8.7** | **6.8** | **5.3** | **0.1** | **-9.3** | **-8.0** | **4.9** |

Source: BC Stats

### Table 26. Balance of Trade in High Technology Goods, by Commodity Group, 1994-2004

Balance ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -16.0 | -19.7 | -23.7 | -20.6 | -30.2 | -31.4 | -32.2 | -56.0 | -51.6 | -53.2 | -44.9 |
| Life Sciences | -203.0 | -225.9 | -235.9 | -228.6 | -256.8 | -295.1 | -363.5 | -409.3 | -337.9 | -347.8 | -360.7 |
| Opto-Electronics | -51.7 | -49.7 | -51.6 | -58.1 | -44.9 | -0.5 | 48.4 | 0.9 | -30.2 | -57.4 | -75.8 |
| Computers and Telecommunications | -1,111.2 | -1,157.6 | -1,087.5 | -1,487.2 | -1,621.8 | -1,621.5 | -2,032.5 | -2,004.3 | -1,836.3 | -1,809.0 | -2,000.4 |
| Electronics | -372.3 | -424.7 | -286.3 | -413.7 | -455.0 | -302.6 | 334.4 | -51.3 | -38.1 | 38.5 | 62.7 |
| Computer Integrated Manufacturing | -138.5 | -118.6 | -110.5 | -143.7 | -90.7 | -105.4 | -127.2 | -101.8 | -110.5 | -97.6 | -53.8 |
| Material Design | -6.4 | -9.3 | -29.4 | -19.5 | -4.8 | -46.8 | 46.0 | -7.5 | -25.0 | -18.3 | -20.2 |
| Aerospace | -273.3 | -140.3 | -299.5 | -445.1 | -382.5 | -503.6 | -388.1 | -688.4 | -602.6 | -356.7 | -253.9 |
| Weapons and Nuclear | -29.6 | -26.9 | -32.9 | -25.8 | -17.9 | -20.4 | -22.7 | -27.4 | -23.8 | -24.9 | -27.7 |
| **Total** | **-2,202.0** | **-2,172.7** | **-2,157.4** | **-2,842.3** | **-2,904.7** | **-2,927.3** | **-2,537.5** | **-3,345.2** | **-3,056.0** | **-2,726.4** | **-2,774.7** |

Note: The trade balance is the net of *total* exports minus total imports. Total exports include re-exports, whereas *domestic* exports are shipments of goods produced within Canada only (in the case of tables in this report, within BC only).

Source: BC Stats

### Table 27. Domestic Exports of High Technology Goods to the United States, by Commodity Group, 1994-2004

**Value ($000,000)**

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 0.8 | 0.4 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 | 1.5 | 1.6 | 1.4 | 1.8 |
| Life Sciences | 17.1 | 16.8 | 23.6 | 40.0 | 45.4 | 59.6 | 71.5 | 85.8 | 167.6 | 175.2 | 172.3 |
| Opto-Electronics | 12.3 | 16.1 | 16.3 | 24.7 | 40.5 | 77.5 | 135.3 | 89.8 | 54.2 | 25.3 | 22.1 |
| Computers and Telecommunications | 173.1 | 151.0 | 173.1 | 244.7 | 314.8 | 285.0 | 250.9 | 206.7 | 219.0 | 182.0 | 189.3 |
| Electronics | 5.0 | 9.1 | 8.7 | 10.3 | 7.5 | 6.7 | 9.9 | 14.4 | 2.3 | 2.5 | 3.2 |
| Computer Integrated Manufacturing | 20.5 | 26.2 | 25.6 | 29.6 | 32.2 | 35.7 | 40.9 | 49.5 | 39.0 | 45.4 | 56.1 |
| Material Design | 21.7 | 18.2 | 0.8 | 13.7 | 57.3 | 93.9 | 178.3 | 50.3 | 3.1 | 1.2 | 1.3 |
| Aerospace | 19.5 | 47.8 | 39.4 | 47.3 | 94.2 | 120.2 | 83.9 | 92.5 | 70.0 | 69.1 | 54.5 |
| Weapons and Nuclear | 0.4 | 0.8 | 0.6 | 3.5 | 4.0 | 0.8 | 1.7 | 6.0 | 1.3 | 0.9 | 0.5 |
| **Total** | **270.6** | **286.4** | **288.7** | **414.4** | **596.6** | **680.0** | **773.0** | **596.4** | **558.1** | **503.0** | **501.2** |

**% change from previous year**

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -54.5 | 70.4 | -0.5 | 10.5 | 2.3 | -9.6 | 135.6 | 7.8 | -12.9 | 32.6 |
| Life Sciences | -1.8 | 41.0 | 69.4 | 13.4 | 31.4 | 20.0 | 19.9 | 95.5 | 4.5 | -1.6 |
| Opto-Electronics | 30.8 | 1.2 | 51.3 | 64.0 | 91.2 | 74.6 | -33.6 | -39.7 | -53.4 | -12.5 |
| Computers and Telecommunications | -12.8 | 14.6 | 41.4 | 28.6 | -9.5 | -12.0 | -17.6 | 6.0 | -16.9 | 4.0 |
| Electronics | 80.4 | -3.9 | 18.2 | -27.5 | -10.4 | 48.4 | 45.3 | -84.1 | 8.9 | 29.0 |
| Computer Integrated Manufacturing | 27.6 | -2.5 | 15.7 | 8.8 | 10.8 | 14.6 | 21.1 | -21.2 | 16.5 | 23.5 |
| Material Design | -16.2 | -95.8 | 1666.4 | 319.3 | 63.9 | 89.9 | -71.8 | -93.8 | -63.2 | 13.6 |
| Aerospace | 144.8 | -17.6 | 20.1 | 99.1 | 27.6 | -30.2 | 10.3 | -24.4 | -1.3 | -21.2 |
| Weapons and Nuclear | 87.1 | -21.4 | 451.1 | 16.5 | -79.7 | 101.3 | 261.3 | -78.5 | -30.7 | -47.0 |
| **Total** | **5.8** | **0.8** | **43.5** | **44.0** | **14.0** | **13.7** | **-22.8** | **-6.4** | **-9.9** | **-0.4** |

Source: BC Stat

### Table 28. Imports of High Technology Goods from the United States, by Commodity Group, 1994-2004

**Value ($000,000)**

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 11.0 | 12.5 | 12.3 | 11.2 | 17.2 | 21.6 | 16.2 | 21.8 | 23.2 | 25.8 | 25.2 |
| Life Sciences | 154.9 | 164.2 | 167.8 | 160.4 | 190.5 | 225.5 | 276.0 | 300.0 | 313.1 | 312.9 | 321.2 |
| Opto-Electronics | 31.2 | 34.1 | 37.8 | 50.2 | 50.7 | 47.6 | 59.5 | 51.9 | 39.4 | 27.9 | 33.1 |
| Computers and Telecommunications | 875.0 | 896.1 | 921.1 | 1,220.0 | 1,351.5 | 1,195.4 | 1,305.7 | 1,173.2 | 994.0 | 876.7 | 839.5 |
| Electronics | 156.7 | 189.4 | 169.2 | 253.3 | 312.2 | 298.8 | 238.7 | 154.9 | 113.9 | 93.6 | 111.6 |
| Computer Integrated Manufacturing | 127.0 | 107.5 | 101.0 | 139.6 | 99.6 | 115.2 | 137.3 | 119.4 | 113.8 | 112.1 | 106.2 |
| Material Design | 26.4 | 23.3 | 27.3 | 29.5 | 56.8 | 125.9 | 104.2 | 51.2 | 22.7 | 15.5 | 14.8 |
| Aerospace | 223.1 | 183.1 | 284.9 | 220.2 | 225.4 | 260.2 | 229.2 | 338.8 | 275.2 | 240.3 | 232.9 |
| Weapons and Nuclear | 20.5 | 17.2 | 18.5 | 19.1 | 15.3 | 15.3 | 19.2 | 21.4 | 18.6 | 19.0 | 19.6 |
| **Total** | **1,625.8** | **1,627.4** | **1,740.0** | **2,103.6** | **2,319.2** | **2,305.6** | **2,386.0** | **2,232.6** | **1,913.9** | **1,723.8** | **1,704.1** |

**% change from previous year**

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 13.7 | -1.1 | -8.9 | 53.3 | 25.5 | -25.1 | 34.6 | 6.4 | 11.3 | -2.7 |
| Life Sciences | 6.0 | 2.2 | -4.4 | 18.7 | 18.4 | 22.4 | 8.7 | 4.4 | -0.1 | 2.7 |
| Opto-Electronics | 9.2 | 10.9 | 32.6 | 1.1 | -6.0 | 25.0 | -12.8 | -24.0 | -29.2 | 18.7 |
| Computers and Telecommunications | 2.4 | 2.8 | 32.5 | 10.8 | -11.5 | 9.2 | -10.1 | -15.3 | -11.8 | -4.2 |
| Electronics | 20.8 | -10.6 | 49.7 | 23.3 | -4.3 | -20.1 | -35.1 | -26.5 | -17.8 | 19.3 |
| Computer Integrated Manufacturing | -15.3 | -6.0 | 38.2 | -28.7 | 15.7 | 19.2 | -13.1 | -4.7 | -1.5 | -5.3 |
| Material Design | -12.0 | 17.3 | 8.1 | 92.5 | 121.7 | -17.3 | -50.9 | -55.7 | -31.8 | -4.1 |
| Aerospace | -17.9 | 55.5 | -22.7 | 2.3 | 15.4 | -11.9 | 47.8 | -18.8 | -12.7 | -3.1 |
| Weapons and Nuclear | -15.8 | 7.6 | 3.1 | -20.0 | 0.0 | 25.7 | 11.2 | -13.1 | 2.3 | 3.1 |
| **Total** | **0.1** | **6.9** | **20.9** | **10.3** | **-0.6** | **3.5** | **-6.4** | **-14.3** | **-9.9** | **-1.1** |

Source: BC Stats

### Table 29. Balance of Trade in High Technology Goods with the United States, by Commodity Group, 1994-2004

**Balance ($000,000)**

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -10.2 | -12.1 | -11.7 | -10.6 | -16.6 | -20.9 | -15.6 | -20.3 | -21.6 | -24.5 | -23.3 |
| Life Sciences | -136.3 | -146.0 | -143.2 | -119.4 | -143.6 | -163.1 | -201.6 | -212.0 | -142.3 | -133.7 | -143.4 |
| Opto-Electronics | -17.1 | -17.5 | -20.3 | -23.6 | -9.2 | 31.3 | 78.2 | 41.0 | 16.9 | -1.5 | -8.8 |
| Computers and Telecommunications | -653.7 | -681.0 | -675.7 | -910.9 | -978.8 | -856.0 | -987.6 | -900.6 | -706.1 | -634.9 | -589.5 |
| Electronics | -140.3 | -147.8 | -106.9 | -150.2 | -128.2 | 9.8 | 456.5 | 33.8 | 14.2 | 16.0 | 29.1 |
| Computer Integrated Manufacturing | -104.3 | -78.9 | -73.0 | -107.9 | -65.1 | -76.6 | -88.4 | -62.0 | -70.5 | -58.2 | -42.2 |
| Material Design | -4.7 | -5.1 | -25.9 | -15.8 | 0.6 | -31.8 | 74.5 | 1.6 | -17.9 | -12.6 | -13.3 |
| Aerospace | -197.4 | -84.3 | -173.1 | -143.7 | -117.7 | -107.6 | -114.3 | -231.2 | -176.4 | -132.1 | -161.7 |
| Weapons and Nuclear | -20.0 | -16.3 | -17.8 | -15.3 | -9.5 | -13.3 | -15.8 | -14.8 | -16.5 | -17.8 | -18.8 |
| **Total** | **-1,284.0** | **-1,189.0** | **-1,247.6** | **-1,497.3** | **-1,468.1** | **-1,228.2** | **-814.2** | **-1,364.5** | **-1,120.2** | **-999.2** | **-972.0** |

Note: The trade balance is the net of *total* exports minus total imports. Total exports include re-exports, whereas *domestic* exports are shipments of goods produced within Canada only (in the case of tables in this report, within BC only).

Source: BC Stats

**Table 30. Domestic Exports of High Technology Goods to the Pacific Rim, by Commodity Group, 1994-2004**

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.5 |
| Life Sciences | 4.2 | 6.5 | 3.7 | 2.8 | 2.6 | 3.5 | 4.0 | 2.8 | 1.9 | 4.9 | 7.7 |
| Opto-Electronics | 2.1 | 1.8 | 2.3 | 1.6 | 1.3 | 2.3 | 11.9 | 4.3 | 11.0 | 4.4 | 4.8 |
| Computers and Telecommunications | 49.4 | 55.2 | 88.5 | 98.7 | 80.4 | 68.7 | 37.8 | 18.4 | 14.5 | 18.2 | 26.7 |
| Electronics | 3.9 | 1.9 | 4.9 | 4.4 | 3.8 | 2.1 | 3.2 | 2.6 | 1.7 | 1.1 | 3.2 |
| Computer Integrated Manufacturing | 3.8 | 4.8 | 3.5 | 4.6 | 5.8 | 5.3 | 5.3 | 3.4 | 3.4 | 6.8 | 14.3 |
| Material Design | 0.6 | 0.3 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| Aerospace | 1.7 | 1.3 | 2.3 | 2.3 | 2.1 | 1.5 | 2.2 | 1.6 | 13.1 | 4.0 | 5.2 |
| Weapons and Nuclear | 0.2 | 0.3 | 0.6 | 0.4 | 0.1 | 0.4 | 2.0 | 0.1 | 1.7 | 0.9 | 0.3 |
| **Total** | **65.9** | **72.1** | **106.2** | **114.6** | **96.1** | **83.8** | **66.8** | **33.3** | **47.2** | **40.4** | **62.7** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -40.8 | 165.8 | -100.0 | - | 42.5 | 1624.6 | -91.7 | -77.4 | 2547.2 | 235.8 |
| Life Sciences | 55.0 | -42.3 | -26.0 | -5.0 | 33.7 | 15.2 | -30.3 | -33.0 | 159.8 | 57.7 |
| Opto-Electronics | -12.8 | 27.0 | -33.1 | -16.0 | 75.7 | 418.2 | -64.2 | 157.3 | -60.2 | 9.2 |
| Computers and Telecommunications | 11.8 | 60.2 | 11.6 | -18.6 | -14.4 | -45.0 | -51.3 | -21.3 | 25.5 | 46.9 |
| Electronics | -51.8 | 162.4 | -10.5 | -13.6 | -45.7 | 54.5 | -20.1 | -35.2 | -35.3 | 194.3 |
| Computer Integrated Manufacturing | 26.3 | -27.2 | 30.5 | 26.7 | -8.4 | 0.0 | -35.2 | -1.6 | 101.2 | 111.0 |
| Material Design | -57.3 | -50.7 | -96.7 | 2707.5 | -100.0 | - | 830.4 | -96.5 | 642.9 | 19.5 |
| Aerospace | -23.5 | 77.6 | -0.3 | -10.0 | -28.5 | 49.8 | -26.3 | 699.1 | -69.2 | 29.0 |
| Weapons and Nuclear | 27.4 | 150.1 | -43.6 | -82.8 | 563.3 | 390.5 | -96.6 | 2424.9 | -50.2 | -60.2 |
| **Total** | **9.3** | **47.3** | **8.0** | **-16.1** | **-12.8** | **-20.3** | **-50.1** | **41.5** | **-14.4** | **55.4** |

Source: BC Stats

**Table 31. Imports of High Technology Goods from the Pacific Rim, by Commodity Group, 1994-2004**

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 0.6 | 0.4 | 0.5 | 0.3 | 1.3 | 2.2 | 3.0 | 2.0 | 1.4 | 1.7 | 1.6 |
| Life Sciences | 18.3 | 20.6 | 23.4 | 19.3 | 18.8 | 25.8 | 28.0 | 35.5 | 33.4 | 35.7 | 42.4 |
| Opto-Electronics | 35.8 | 34.6 | 34.5 | 41.2 | 41.4 | 40.1 | 53.5 | 58.9 | 51.7 | 54.1 | 62.7 |
| Computers and Telecommunications | 415.1 | 420.2 | 389.6 | 532.1 | 573.1 | 589.8 | 623.7 | 642.7 | 736.9 | 855.6 | 1,032.9 |
| Electronics | 130.7 | 183.8 | 130.5 | 206.7 | 243.2 | 231.9 | 212.5 | 122.7 | 81.8 | 77.9 | 99.0 |
| Computer Integrated Manufacturing | 19.0 | 24.3 | 20.7 | 22.1 | 18.5 | 20.9 | 25.6 | 20.2 | 20.2 | 28.8 | 22.9 |
| Material Design | 1.6 | 2.5 | 1.6 | 1.4 | 1.9 | 8.7 | 12.4 | 13.6 | 2.2 | 1.8 | 1.7 |
| Aerospace | 3.3 | 3.0 | 5.6 | 6.1 | 14.4 | 16.0 | 17.1 | 17.9 | 12.6 | 9.0 | 16.1 |
| Weapons and Nuclear | 1.2 | 1.3 | 1.6 | 1.6 | 1.4 | 1.5 | 1.7 | 2.2 | 2.1 | 2.3 | 2.2 |
| **Total** | **625.5** | **690.7** | **608.0** | **830.8** | **913.9** | **936.7** | **977.6** | **915.7** | **942.3** | **1,066.8** | **1,281.5** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -39.6 | 36.2 | -33.0 | 308.8 | 63.2 | 39.6 | -34.8 | -29.2 | 24.5 | -6.0 |
| Life Sciences | 12.7 | 13.6 | -17.9 | -2.4 | 37.1 | 8.8 | 26.6 | -6.0 | 7.0 | 18.7 |
| Opto-Electronics | -3.2 | -0.4 | 19.3 | 0.5 | -3.2 | 33.7 | 10.1 | -12.3 | 4.6 | 16.0 |
| Computers and Telecommunications | 1.2 | -7.3 | 36.6 | 7.7 | 2.9 | 5.8 | 3.0 | 14.7 | 16.1 | 20.7 |
| Electronics | 40.6 | -29.0 | 58.4 | 17.6 | -4.6 | -8.4 | -42.3 | -33.3 | -4.9 | 27.1 |
| Computer Integrated Manufacturing | 27.7 | -14.9 | 6.7 | -16.2 | 12.8 | 22.3 | -21.1 | 0.1 | 42.5 | -20.5 |
| Material Design | 58.6 | -33.8 | -15.6 | 39.8 | 350.8 | 42.9 | 9.7 | -84.1 | -16.9 | -3.9 |
| Aerospace | -8.7 | 88.6 | 9.6 | 133.7 | 11.3 | 6.9 | 4.9 | -29.4 | -28.7 | 78.5 |
| Weapons and Nuclear | 8.5 | 21.8 | -0.2 | -12.9 | 4.7 | 17.9 | 25.9 | -4.4 | 8.7 | -0.7 |
| **Total** | **10.4** | **-12.0** | **36.6** | **10.0** | **2.5** | **4.4** | **-6.3** | **2.9** | **13.2** | **20.1** |

Source: BC Stats

**Table 32. Balance of Trade in High Technology Goods with the Pacific Rim, by Commodity Group, 1994-2004**

Balance ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -0.5 | -0.3 | -0.3 | -0.3 | -1.3 | -2.2 | -2.7 | -2.0 | -1.4 | -1.6 | -1.2 |
| Life Sciences | -13.8 | -14.1 | -19.6 | -16.1 | -16.1 | -22.1 | -23.8 | -32.5 | -31.1 | -29.8 | -33.5 |
| Opto-Electronics | -33.6 | -32.5 | -31.8 | -39.3 | -40.0 | -37.7 | -41.6 | -54.6 | -40.6 | -49.7 | -57.7 |
| Computers and Telecommunications | -350.7 | -362.0 | -292.9 | -422.3 | -485.2 | -514.0 | -583.1 | -620.8 | -719.1 | -828.9 | -1,001.3 |
| Electronics | -126.3 | -177.6 | -118.4 | -187.4 | -210.5 | -181.0 | -64.1 | -51.2 | -29.1 | 29.5 | 33.9 |
| Computer Integrated Manufacturing | -15.2 | -19.5 | -17.1 | -17.5 | -12.7 | -15.6 | -20.2 | -16.7 | -16.7 | -21.5 | -6.3 |
| Material Design | -0.9 | -2.2 | -1.5 | -1.4 | -1.8 | -8.7 | -12.4 | -11.4 | -2.1 | -1.7 | -1.7 |
| Aerospace | -1.3 | 7.6 | -1.6 | -0.7 | -10.6 | -11.7 | -11.4 | -14.4 | 2.5 | -0.7 | 23.3 |
| Weapons and Nuclear | -1.0 | -1.0 | -0.9 | -1.2 | -1.3 | -0.9 | 0.5 | -2.1 | -0.3 | -1.3 | -1.9 |
| **Total** | **-543.2** | **-601.6** | **-484.2** | **-686.3** | **-779.5** | **-793.9** | **-758.9** | **-805.7** | **-837.8** | **-905.6** | **-1,046.3** |

Note: The trade balance is the net of *total* exports minus total imports. Total exports include re-exports, whereas *domestic* exports are shipments of goods produced within Canada only (in the case of tables in this report, within BC only).

Source: BC Stats

### Table 33. Domestic Exports of High Technology Goods to Japan, by Commodity Group, 1994-2004

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.3 |
| Life Sciences | 2.1 | 3.9 | 1.7 | 1.2 | 0.9 | 1.5 | 2.3 | 0.6 | 0.5 | 0.8 | 1.4 |
| Opto-Electronics | 0.7 | 0.5 | 0.5 | 0.2 | 0.2 | 0.6 | 8.8 | 1.2 | 9.3 | 1.1 | 1.3 |
| Computers and Telecommunications | 6.9 | 8.0 | 13.5 | 15.2 | 5.5 | 1.9 | 16.5 | 6.2 | 2.6 | 3.1 | 4.1 |
| Electronics | 0.6 | 0.9 | 1.3 | 1.5 | 1.0 | 0.2 | 0.4 | 1.4 | 1.0 | 0.1 | 0.2 |
| Computer Integrated Manufacturing | 0.0 | 0.3 | 1.3 | 0.6 | 0.0 | 0.2 | 0.0 | 0.1 | 0.1 | 0.4 | 3.1 |
| Material Design | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Aerospace | 0.5 | 0.0 | 0.0 | 0.3 | 0.9 | 0.7 | 0.4 | 0.2 | 8.6 | 1.8 | 0.5 |
| Weapons and Nuclear | 0.0 | 0.0 | 0.3 | 0.3 | 0.0 | 0.1 | 1.9 | 0.0 | 0.0 | 0.0 | 0.2 |
| **Total** | **10.8** | **13.6** | **18.7** | **19.3** | **8.6** | **5.2** | **30.4** | **9.7** | **22.0** | **7.3** | **11.0** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | - | 588.7 | -100.0 | - | -100.0 | - | -100.0 | - | - | 326.3 |
| Life Sciences | 81.6 | -57.3 | -30.0 | -23.8 | 66.5 | 53.1 | -75.7 | -10.5 | 60.3 | 73.0 |
| Opto-Electronics | -31.6 | 12.0 | -56.3 | -26.1 | 260.2 | 1343.6 | -86.0 | 653.0 | -88.5 | 18.3 |
| Computers and Telecommunications | 16.0 | 68.1 | 12.2 | -63.6 | -66.2 | 784.3 | -62.6 | -58.1 | 21.0 | 31.1 |
| Electronics | 49.5 | 53.4 | 14.2 | -34.0 | -84.6 | 173.8 | 225.9 | -31.2 | -93.3 | 153.6 |
| Computer Integrated Manufacturing | 1429.0 | 435.3 | -52.3 | -93.9 | 428.7 | -99.7 | 9357.1 | 10.6 | 448.0 | 788.7 |
| Material Design | - | -100.0 | - | - | -100.0 | - | - | -100.0 | - | 20.7 |
| Aerospace | -92.4 | -89.8 | 8435.7 | 199.2 | -17.6 | -50.0 | -41.1 | 3770.8 | -78.8 | -73.6 |
| Weapons and Nuclear | 89.2 | 790.8 | -21.1 | -95.3 | 1039.2 | 1247.7 | -99.6 | 574.4 | -0.9 | 215.1 |
| **Total** | **25.5** | **37.6** | **2.9** | **-55.4** | **-39.5** | **483.0** | **-68.0** | **127.1** | **-66.6** | **49.0** |

Source: BC Stats

### Table 34. Imports of High Technology Goods from Japan, by Commodity Group, 1994-2004

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 0.5 | 0.2 | 0.4 | 0.1 | 0.1 | 0.2 | 0.6 | 0.2 | 0.4 | 0.3 | 0.1 |
| Life Sciences | 11.0 | 11.4 | 10.7 | 10.1 | 11.3 | 14.3 | 14.6 | 17.1 | 17.3 | 18.6 | 21.0 |
| Opto-Electronics | 24.3 | 20.7 | 16.2 | 18.0 | 16.3 | 16.6 | 23.0 | 20.4 | 17.2 | 17.4 | 16.6 |
| Computers and Telecommunications | 139.9 | 149.8 | 144.4 | 198.8 | 204.5 | 192.6 | 178.8 | 164.6 | 167.0 | 154.3 | 163.0 |
| Electronics | 53.2 | 74.3 | 39.0 | 51.6 | 58.1 | 57.6 | 54.6 | 30.8 | 18.2 | 12.7 | 13.6 |
| Computer Integrated Manufacturing | 16.8 | 21.0 | 16.8 | 18.9 | 14.9 | 17.5 | 20.5 | 15.0 | 13.9 | 23.5 | 15.6 |
| Material Design | 1.2 | 2.1 | 1.3 | 1.3 | 1.5 | 7.0 | 7.9 | 7.5 | 1.2 | 1.0 | 0.7 |
| Aerospace | 0.5 | 0.6 | 3.0 | 4.0 | 12.4 | 14.3 | 15.3 | 15.4 | 10.6 | 7.4 | 13.4 |
| Weapons and Nuclear | 0.7 | 0.8 | 0.8 | 0.9 | 0.5 | 0.5 | 0.8 | 1.0 | 0.8 | 0.7 | 0.8 |
| **Total** | **248.0** | **281.0** | **232.5** | **303.7** | **319.6** | **320.5** | **316.1** | **272.0** | **246.6** | **235.9** | **244.7** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -62.4 | 80.1 | -62.3 | -43.8 | 235.6 | 123.0 | -56.8 | 58.5 | -15.0 | -64.7 |
| Life Sciences | 4.1 | -6.4 | -5.2 | 11.9 | 26.0 | 2.5 | 16.4 | 1.2 | 7.5 | 13.1 |
| Opto-Electronics | -14.6 | -21.9 | 11.1 | -9.1 | 1.4 | 38.9 | -11.1 | -15.7 | 0.7 | -4.6 |
| Computers and Telecommunications | 7.1 | -3.6 | 37.7 | 2.8 | -5.8 | -7.1 | -8.0 | 1.5 | -7.6 | 5.7 |
| Electronics | 39.7 | -47.5 | 32.3 | 12.7 | -1.0 | -5.1 | -43.6 | -40.7 | -30.2 | 6.5 |
| Computer Integrated Manufacturing | 25.1 | -19.8 | 12.5 | -21.3 | 17.3 | 17.5 | -26.7 | -7.4 | 68.7 | -33.5 |
| Material Design | 73.4 | -40.0 | -0.5 | 15.2 | 380.4 | 12.1 | -5.2 | -83.6 | -19.7 | -28.1 |
| Aerospace | 18.8 | 393.5 | 32.5 | 209.7 | 15.5 | 7.0 | 0.3 | -31.1 | -30.0 | 81.2 |
| Weapons and Nuclear | 8.4 | -1.2 | 13.9 | -41.6 | -9.0 | 63.4 | 35.0 | -23.7 | -7.0 | 1.7 |
| **Total** | **13.3** | **-17.2** | **30.6** | **5.2** | **0.3** | **-1.4** | **-14.0** | **-9.3** | **-4.4** | **3.7** |

Source: BC Stats

### Table 35. Balance of Trade in High Technology Goods with Japan, by Commodity Group, 1994-2004

Balance ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -11.0 | -11.4 | -10.7 | -10.1 | -11.3 | -14.3 | -14.6 | -17.1 | -17.3 | -18.5 | -20.7 |
| Life Sciences | -21.9 | -16.8 | -14.5 | -16.8 | -15.4 | -15.0 | -20.6 | -19.9 | -16.5 | -16.1 | -15.1 |
| Opto-Electronics | -139.1 | -149.2 | -143.6 | -198.4 | -204.3 | -192.0 | -170.0 | -163.3 | -157.5 | -153.2 | -161.7 |
| Computers and Telecommunications | -45.8 | -66.0 | -21.8 | -31.4 | -52.4 | -55.5 | -38.0 | -23.9 | -15.2 | -9.0 | -8.8 |
| Electronics | -16.1 | -19.1 | -13.9 | -14.4 | -8.4 | -5.9 | 20.8 | 1.0 | 1.1 | -2.7 | 6.4 |
| Computer Integrated Manufacturing | -1.2 | -1.9 | 0.1 | -0.6 | -1.4 | -6.8 | -7.9 | -7.4 | -1.2 | -0.6 | 2.5 |
| Material Design | -0.5 | -0.6 | -3.0 | -4.0 | -12.3 | -14.3 | -15.3 | -15.3 | -10.6 | -7.4 | -13.4 |
| Aerospace | -0.1 | 8.3 | -0.4 | -0.2 | 1.4 | 0.6 | -0.1 | -0.6 | 7.8 | 1.2 | -0.1 |
| Weapons and Nuclear | -0.7 | -0.7 | -0.4 | -0.6 | -0.5 | -0.3 | 1.2 | -1.0 | -0.7 | -0.7 | -0.6 |
| **Total** | **-236.1** | **-256.9** | **-207.8** | **-275.9** | **-304.3** | **-303.3** | **-244.3** | **-246.7** | **-209.7** | **-206.5** | **-211.0** |

Note: The trade balance is the net of *total* exports minus total imports. Total exports include re-exports, whereas *domestic* exports are shipments of goods produced within Canada only (in the case of tables in this report, within BC only).

Source: BC Stats

**Table 36. Domestic Exports of High Technology Goods to the European Union, by Commodity Group, 1994-2004**

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 0.1 | 1.0 | 0.0 | 0.1 | 1.3 | 0.1 | 0.0 | 0.0 | 0.1 | 0.3 | 1.0 |
| Life Sciences | 1.6 | 2.3 | 2.0 | 2.1 | 4.4 | 4.8 | 4.3 | 4.0 | 11.8 | 17.3 | 26.8 |
| Opto-Electronics | 2.1 | 3.2 | 2.1 | 5.4 | 7.1 | 8.7 | 17.3 | 24.4 | 3.4 | 3.0 | 3.2 |
| Computers and Telecommunications | 26.9 | 20.6 | 21.6 | 22.2 | 40.6 | 33.8 | 20.1 | 27.4 | 20.7 | 19.3 | 16.7 |
| Electronics | 1.7 | 1.2 | 0.4 | 1.1 | 1.2 | 0.7 | 0.8 | 1.1 | 0.4 | 0.2 | 2.0 |
| Computer Integrated Manufacturing | 0.9 | 0.9 | 0.9 | 1.2 | 0.7 | 1.1 | 1.4 | 0.9 | 1.1 | 2.1 | 8.4 |
| Material Design | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 6.8 | 0.0 | 0.2 | 0.1 |
| Aerospace | 1.1 | 2.8 | 2.4 | 1.3 | 3.1 | 3.6 | 13.6 | 22.5 | 19.9 | 7.8 | 4.6 |
| Weapons and Nuclear | 0.1 | 0.9 | 0.2 | 0.0 | 0.3 | 1.0 | 2.5 | 0.3 | 0.8 | 0.3 | 0.2 |
| **Total** | **34.7** | **32.9** | **29.6** | **33.4** | **58.5** | **53.7** | **60.2** | **87.5** | **58.1** | **50.6** | **63.1** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 1005.0 | -98.4 | 312.2 | 1856.3 | -94.9 | -100.0 | - | 606.6 | 219.6 | 264.1 |
| Life Sciences | 41.4 | -13.0 | 7.2 | 107.5 | 9.5 | -11.1 | -5.7 | 194.1 | 46.9 | 54.8 |
| Opto-Electronics | 49.0 | -33.4 | 154.8 | 31.0 | 22.3 | 99.1 | 41.2 | -86.2 | -11.4 | 7.9 |
| Computers and Telecommunications | -23.4 | 4.6 | 3.0 | 82.7 | -16.6 | -40.6 | 36.4 | -24.5 | -6.6 | -13.5 |
| Electronics | -32.2 | -66.4 | 177.3 | 6.7 | -40.6 | 12.4 | 39.7 | -63.6 | -40.8 | 782.5 |
| Computer Integrated Manufacturing | -0.1 | 0.6 | 25.5 | -39.6 | 51.9 | 31.8 | -39.3 | 23.6 | 101.8 | 294.3 |
| Material Design | -96.8 | - | -100.0 | - | - | 1364.7 | 2663.1 | -99.7 | 944.6 | -66.8 |
| Aerospace | 156.5 | -15.3 | -43.8 | 131.0 | 17.1 | 278.5 | 65.0 | -11.6 | -60.7 | -41.1 |
| Weapons and Nuclear | 1627.4 | -73.2 | -91.8 | 1165.9 | 276.9 | 164.2 | -86.4 | 136.8 | -63.4 | -29.7 |
| **Total** | **-5.2** | **-9.9** | **12.8** | **75.3** | **-8.2** | **12.2** | **45.2** | **-33.6** | **-13.0** | **24.7** |

1. Prior to 1995, data for Slovenia were still included in the former Yugoslavia, therefore 1994 figures do not include Slovenia.

Source: BC Stats

**Table 37. Imports of High Technology Goods from the European Union, by Commodity Group, 1994-2004**

Value ($000,000)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 3.9 | 4.7 | 5.6 | 8.0 | 12.1 | 8.2 | 10.1 | 28.9 | 23.1 | 23.0 | 21.1 |
| Life Sciences | 46.4 | 54.5 | 61.2 | 76.4 | 82.9 | 94.4 | 116.9 | 133.0 | 141.0 | 163.9 | 156.7 |
| Opto-Electronics | 2.7 | 2.6 | 3.3 | 3.4 | 3.1 | 3.6 | 5.9 | 5.5 | 6.1 | 7.8 | 8.3 |
| Computers and Telecommunications | 70.3 | 66.0 | 50.7 | 69.6 | 85.8 | 114.3 | 190.5 | 104.6 | 97.5 | 89.8 | 95.8 |
| Electronics | 38.6 | 39.3 | 34.2 | 35.3 | 50.0 | 48.3 | 34.0 | 15.9 | 12.9 | 15.9 | 18.2 |
| Computer Integrated Manufacturing | 18.1 | 18.1 | 19.1 | 16.3 | 12.4 | 13.7 | 18.9 | 20.9 | 20.6 | 18.4 | 21.3 |
| Material Design | 0.6 | 1.2 | 1.5 | 1.3 | 2.6 | 4.3 | 12.8 | 15.0 | 2.5 | 2.8 | 2.7 |
| Aerospace | 73.2 | 63.9 | 121.7 | 292.8 | 244.8 | 375.8 | 260.1 | 446.9 | 434.3 | 228.1 | 141.4 |
| Weapons and Nuclear | 6.8 | 8.5 | 8.8 | 8.0 | 6.1 | 5.8 | 8.8 | 8.7 | 5.9 | 4.5 | 8.0 |
| **Total** | **260.7** | **258.9** | **306.3** | **511.1** | **499.9** | **668.4** | **658.0** | **779.3** | **744.1** | **554.1** | **473.6** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | 18.9 | 20.7 | 42.3 | 51.1 | -31.8 | 22.4 | 185.9 | -19.8 | -0.7 | -8.0 |
| Life Sciences | 17.4 | 12.3 | 24.7 | 8.6 | 13.8 | 23.9 | 13.8 | 6.0 | 16.2 | -4.4 |
| Opto-Electronics | -3.5 | 26.9 | 1.5 | -9.4 | 17.8 | 63.3 | -7.5 | 12.4 | 26.8 | 6.2 |
| Computers and Telecommunications | -6.1 | -23.2 | 37.1 | 23.3 | 33.2 | 66.7 | -45.1 | -6.8 | -7.9 | 6.7 |
| Electronics | 1.9 | -12.8 | 3.2 | 41.6 | -3.4 | -29.6 | -53.3 | -18.5 | 23.1 | 14.5 |
| Computer Integrated Manufacturing | 0.1 | 5.2 | -14.5 | -24.2 | 10.6 | 38.4 | 10.6 | -1.5 | -10.8 | 15.9 |
| Material Design | 94.5 | 33.0 | -17.9 | 110.7 | 62.9 | 195.5 | 17.4 | -83.1 | 10.9 | -4.8 |
| Aerospace | -12.7 | 90.5 | 140.6 | -16.4 | 53.5 | -30.8 | 71.8 | -2.8 | -47.5 | -38.0 |
| Weapons and Nuclear | 24.9 | 2.8 | -8.7 | -23.8 | -6.0 | 52.5 | -0.4 | -32.4 | -24.2 | 79.0 |
| **Total** | **-0.7** | **18.3** | **66.9** | **-2.2** | **33.7** | **-1.6** | **18.4** | **-4.5** | **-25.5** | **-14.5** |

1. Prior to 1995, data for Slovenia were still included in the former Yugoslavia, therefore 1994 figures do not include Slovenia.

Source: BC Stats

### Table 38. Balance of Trade in High Technology Goods with the European Union, by Commodity Group, 1994-2004

**Balance ($000,000)**

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Biotechnology | -3.8 | -3.7 | -5.6 | -7.9 | -10.8 | -8.2 | -10.1 | -28.8 | -23.0 | -22.7 | -20.1 |
| Life Sciences | -44.6 | -52.2 | -59.2 | -74.1 | -78.4 | -89.5 | -112.5 | -129.0 | -129.0 | -146.5 | -129.8 |
| Opto-Electronics | -0.6 | 0.6 | -1.0 | 2.2 | 4.0 | 5.1 | 11.7 | 19.3 | -2.7 | -4.5 | -4.8 |
| Computers and Telecommunications | -41.3 | -43.6 | -27.2 | -45.3 | -43.5 | -77.0 | -162.7 | -73.2 | -73.2 | -65.0 | -73.7 |
| Electronics | -36.8 | -37.5 | -31.6 | -28.6 | -43.0 | -35.2 | 1.0 | 3.8 | -5.4 | 6.0 | 14.8 |
| Computer Integrated Manufacturing | -17.2 | -17.2 | -18.0 | -15.2 | -11.7 | -12.6 | -17.5 | -20.0 | -19.5 | -16.2 | -12.6 |
| Material Design | -0.4 | -1.1 | -1.5 | -1.3 | -2.6 | -4.3 | -12.5 | -8.1 | -2.5 | -2.5 | -2.5 |
| Aerospace | -70.8 | -59.4 | -118.6 | -290.6 | -240.2 | -369.9 | -237.8 | -416.8 | -402.1 | -213.1 | -130.0 |
| Weapons and Nuclear | -6.7 | -7.5 | -8.5 | -7.9 | -5.8 | -4.6 | -5.9 | -8.3 | -5.0 | -3.8 | -7.7 |
| **Total** | **-222.3** | **-221.6** | **-271.2** | **-468.7** | **-432.0** | **-596.1** | **-546.4** | **-661.4** | **-662.6** | **-468.2** | **-366.5** |

Note: The trade balance is the net of *total* exports minus total imports. Total exports include re-exports, whereas *domestic* exports are shipments of goods produced within Canada only (in the case of tables in this report, within BC only).

1. Prior to 1995, data for Slovenia were still included in the former Yugoslavia, therefore 1994 figures do not include Slovenia.

Source: BC Stats

### Table 39. Exports of High Technology Services, 1998-2004

**Value ($ millions)**

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **High Technology Services Exports** | | | | | | | |
| Communications & Film | 322 | 477 | 412 | 364 | 394 | 441 | 360 |
| Business and Computer Services | 1,328 | 1,163 | 1,678 | 1,521 | 1,669 | 1,762 | 1,727 |
| Computer Services[1] | 456 | 686 | 906 | 956 | 822 | 993 | na |
| Engineering Services[1] | 222 | 168 | 103 | 137 | 112 | 216 | na |
| **Total** | **1,650** | **1,640** | **2,090** | **1,885** | **2,063** | **2,203** | **2,086** |

**% change from previous year**

| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|
| **High Technology Services Exports** | | | | | | |
| Communications & Film | 47.9 | -13.5 | -11.7 | 8.3 | 11.8 | -18.4 |
| Business and Computer Services | -12.4 | 44.2 | -9.4 | 9.8 | 5.6 | -2.0 |
| Computer Services Exports | 50.5 | 32.0 | 5.5 | -14.0 | 20.8 | na |
| Engineering Services | -24.1 | -38.9 | 33.1 | -18.2 | 93.6 | na |
| **Total** | **-0.6** | **27.5** | **-9.8** | **9.5** | **6.8** | **-5.3** |

1. Based on surveyed firms only.
"na" denotes not yet available

Source: BC Stats and Statistics Canada

### Table 40. Domestic Exports of High Technology Goods by Province, 1994-2004

**Value ($ millions)**

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| British Columbia | 390.7 | 406.8 | 450.6 | 581.4 | 769.2 | 840.1 | 923.1 | 748.1 | 684.6 | 628.5 | 672.9 |
| Alberta | 659.9 | 918.8 | 1,386.1 | 1,238.4 | 1,540.9 | 1,915.6 | 4,375.7 | 2,439.0 | 1,889.6 | 1,189.0 | 1,142.9 |
| Ontario | 8,676.6 | 10,891.6 | 10,189.7 | 10,899.2 | 11,782.7 | 12,338.3 | 15,186.1 | 13,512.8 | 10,282.4 | 8,459.0 | 9,392.1 |
| Quebec | 6,174.6 | 7,663.7 | 9,035.0 | 9,801.7 | 11,860.1 | 13,835.2 | 20,677.2 | 16,948.2 | 14,496.9 | 14,270.9 | 13,225.7 |
| **Canada** | **16,416.0** | **20,288.2** | **21,643.7** | **23,229.3** | **26,829.2** | **29,854.5** | **42,221.3** | **34,594.9** | **28,012.8** | **25,194.1** | **24,988.1** |

**% change from previous year**

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| British Columbia | 4.1 | 10.8 | 29.0 | 32.3 | 9.2 | 9.9 | -19.0 | -8.5 | -8.2 | 7.1 |
| Alberta | 39.2 | 50.9 | -10.7 | 24.4 | 24.3 | 128.4 | -44.3 | -22.5 | -37.1 | -3.9 |
| Ontario | 25.5 | -6.4 | 7.0 | 8.1 | 4.7 | 23.1 | -11.0 | -23.9 | -17.7 | 11.0 |
| Quebec | 24.1 | 17.9 | 8.5 | 21.0 | 16.7 | 49.5 | -18.0 | -14.5 | -1.6 | -7.3 |
| **Canada** | **23.6** | **6.7** | **7.3** | **15.5** | **11.3** | **41.4** | **-18.1** | **-19.0** | **-10.1** | **-0.8** |

**High Technology Share of Total Domestic Exports (%)**

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| British Columbia | 1.7 | 1.5 | 1.7 | 2.2 | 3.0 | 2.9 | 2.7 | 2.4 | 2.4 | 2.2 | 2.2 |
| Alberta | 2.9 | 3.4 | 4.4 | 3.7 | 5.0 | 5.5 | 7.9 | 4.3 | 3.9 | 2.1 | 1.7 |
| Ontario | 8.1 | 8.9 | 8.0 | 7.8 | 7.6 | 7.0 | 8.2 | 7.6 | 5.7 | 5.0 | 5.2 |
| Quebec | 16.0 | 16.9 | 19.3 | 19.5 | 21.4 | 23.2 | 29.0 | 24.9 | 22.1 | 23.4 | 20.5 |
| Canada | 7.7 | 8.2 | 8.3 | 8.3 | 9.0 | 9.0 | 10.9 | 9.2 | 7.7 | 7.1 | 6.5 |

Note that high technology exports for Canada, Alberta, Ontario and Quebec are based on high tech definitions developed for British Columbia. If these definitions were derived specifically for any of those regions, they might differ slightly.

Source: BC Stats

### Table 41. Imports of High Technology Goods, Canada and BC, 1994-2004

Value ($ millions)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| British Columbia | 2,687.0 | 2,757.2 | 2,842.9 | 3,658.8 | 3,978.1 | 4,249.3 | 4,475.0 | 4,480.6 | 4,065.0 | 3,740.9 | 3,924.6 |
| **Canada** | **26,972.8** | **32,863.0** | **34,008.4** | **40,106.6** | **42,519.1** | **48,284.9** | **57,512.4** | **50,399.2** | **44,313.5** | **40,749.5** | **43,821.3** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| British Columbia | 2.6 | 3.1 | 28.7 | 8.7 | 6.8 | 5.3 | 0.1 | -9.3 | -8.0 | 4.9 |
| **Canada** | **21.8** | **3.5** | **18.9** | **6.0** | **13.6** | **19.1** | **-12.4** | **-12.1** | **-8.0** | **7.5** |

Note that high technology imports for Canada are based on high tech definitions developed for British Columbia. If these definitions were derived specifically for any of those regions, they might differ slightly.

Source: BC Stats

### Table 42. United States High Technology Commodity Trade, 1994-2004

Value ($US millions)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Domestic Exports | 84,135.5 | 120,668.2 | 133,241.6 | 157,958.2 | 168,296.1 | 178,519.9 | 197,109.5 | 172,412.2 | 153,273.5 | 151,535.4 | 166,441.8 |
| Re-Exports | 12,328.4 | 17,504.0 | 19,280.1 | 19,637.3 | 18,256.3 | 21,488.0 | 30,051.5 | 27,694.6 | 25,353.8 | 28,251.2 | 35,012.2 |
| Imports | 93,854.8 | 124,675.6 | 129,265.8 | 145,055.5 | 156,528.2 | 180,646.3 | 222,146.4 | 195,265.2 | 196,100.1 | 207,195.8 | 238,478.3 |
| **Balance of Trade** | **2,609.1** | **13,496.5** | **23,256.0** | **32,539.9** | **30,024.2** | **19,361.5** | **5,014.6** | **4,841.5** | **-17,472.8** | **-27,409.3** | **-37,024.2** |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| Domestic Exports | 43.4 | 10.4 | 18.6 | 6.5 | 6.1 | 10.4 | -12.5 | -11.1 | -1.1 | 9.8 |
| Re-Exports | 42.0 | 10.1 | 1.9 | -7.0 | 17.7 | 39.9 | -7.8 | -8.5 | 11.4 | 23.9 |
| Imports | 32.8 | 3.7 | 12.2 | 7.9 | 15.4 | 23.0 | -12.1 | 0.4 | 5.7 | 15.1 |
| **Balance of Trade** | **417.3** | **72.3** | **39.9** | **-7.7** | **-35.5** | **-74.1** | **-3.5** | **-460.9** | **56.9** | **35.1** |

Source: BC Stats and US Department of Commerce

### Table 43. High Technology Trade Comparison: United States vs. Canada and BC (in Canadian $), 1994-2004

Value ($Cdn millions)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Domestic Exports** | | | | | | | | | | | |
| United States* | 114,901.7 | 165,610.4 | 181,677.9 | 218,708.6 | 249,668.2 | 265,227.9 | 292,785.2 | 267,038.9 | 240,691.9 | 212,303.3 | 216,589.4 |
| British Columbia | 390.7 | 406.8 | 450.6 | 581.4 | 769.2 | 840.1 | 923.1 | 748.1 | 684.6 | 628.5 | 672.9 |
| Canada | 16,416.0 | 20,288.2 | 21,643.7 | 23,229.3 | 26,829.2 | 29,854.5 | 42,221.3 | 34,594.9 | 28,012.8 | 25,194.1 | 24,988.1 |
| **Imports** | | | | | | | | | | | |
| United States* | 128,175.0 | 171,110.5 | 176,256.7 | 200,843.6 | 232,210.4 | 268,387.2 | 329,975.0 | 302,434.6 | 307,944.4 | 290,284.5 | 310,329.8 |
| British Columbia | 2,687.0 | 2,757.2 | 2,842.9 | 3,658.8 | 3,978.1 | 4,249.3 | 4,475.0 | 4,480.6 | 4,065.0 | 3,740.9 | 3,924.6 |
| Canada | 26,972.8 | 32,863.0 | 34,008.4 | 40,106.6 | 42,519.1 | 48,284.9 | 57,512.4 | 50,399.2 | 44,313.5 | 40,749.5 | 43,821.3 |

% change from previous year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Domestic Exports** | | | | | | | | | | |
| United States* | 44.1 | 9.7 | 20.4 | 14.2 | 6.2 | 10.4 | -8.8 | -9.9 | -11.8 | 2.0 |
| British Columbia | 4.1 | 10.8 | 29.0 | 32.3 | 9.2 | 9.9 | -19.0 | -8.5 | -8.2 | 7.1 |
| Canada | 23.6 | 6.7 | 7.3 | 15.5 | 11.3 | 41.4 | -18.1 | -19.0 | -10.1 | -0.8 |
| **Imports** | | | | | | | | | | |
| United States* | 33.5 | 3.0 | 13.9 | 15.6 | 15.6 | 22.9 | -8.3 | 1.8 | -5.7 | 6.9 |
| British Columbia | 2.6 | 3.1 | 28.7 | 8.7 | 6.8 | 5.3 | 0.1 | -9.3 | -8.0 | 4.9 |
| Canada | 21.8 | 3.5 | 17.9 | 6.0 | 13.6 | 19.1 | -12.4 | -12.1 | -8.0 | 7.5 |

* Converted from US dollars using an average annual exchange rate

Source: BC Stats and US Department of Commerce

# Appendix A:
# Defining the High Technology Sector

## How was the sector definition arrived at?

In 1995, BC STATS and the Science and Technology Division of the Ministry of Employment and Investment developed a definition of the high technology sector that focused on standard industries that produce high technology goods and services as their ultimate outputs. The definition looked at the high tech outputs of various standard industries (industries defined in the Canadian Standard Industrial Classification—SIC), their level of research activity, their representation in existing lists of high tech companies, and the opinions of an expert panel drawn from government, university, and the private sector.[15] The SIC data series have since been discontinued and a new classification system, the North American Industry Classification System (NAICS), has been implemented.

The adoption of NAICS-based industry definitions made it necessary to revisit the definition on which the high-tech estimates were based, since many of the industry groupings previously used were no longer available. During 2001, in consultation with industry stakeholders, BC STATS developed a new definition of the high technology sector that was based on the NAICS industry categories. The process of developing the criteria for including or excluding specific industries in the definition was similar to that of the original SIC-based definition as commodity lists, research activities and company lists were once again examined. In addition, since an accepted SIC-based definition was already available, an SIC to NAICS concordance was used as a starting point.[16]

The definition originally chosen (based on theoretical considerations) proved to be only a starting point, as much of the information required to compile high technology statistics was not available at the required level of detail. A working definition, based on

---

[15] The complete methodology is presented in Lawrance, J. and Miller, S. *Defining the British Columbia High Technology/Knowledge Sector*. (1996). BC STATS, Ministry of Government Services, and Ministry of Employment and Investment, Government of British Columbia. This document is available on-line at:

http://www.bcstats.gov.bc.ca/data/bus_stat/busind/hi_tech/ht_def.pdf

[16] A more detailed discussion of the methodology is presented in Miller, S. and Adams, S. *Defining the British Columbia High Technology Sector Using NAICS*. (2001). BC STATS, Ministry of Management Services, Government of British Columbia. This document is available on-line at:

http://www.bcstats.gov.bc.ca/data/bus_stat/busind/hi_tech/NAICSdef.pdf

availability of data, was adopted in order to prepare the estimates presented in the *Profile* report.

In recent years, a more broadly-based view of high technology has evolved, which encompasses some industries not considered high tech just a few years ago, such as various communications technologies. As such, this edition of the *Profile* report has incorporated an expanded definition. The new industries added to the existing definition were determined in consultation with Leading Edge BC through a review of literature pertaining to high technology definitions in use elsewhere, particularly those from the American Electronics Association (whose definition has been widely used by institutions around the world) and Industry Canada.[18] Based on this review, starting with this edition several new service industries have been added to the high technology definition.

The new definition has been applied to the entire time series and all trend analysis was conducted using this revised data. Also, data for other provinces have also been revised using the new high technology definition, such that all provincial comparisons use a consistent definition. Data on trade of goods have not been affected by the definitional change since these data are not measured using an industry-based definition, but rather are aggregated using commodity-based codes (see Appendix B). However, trade in services has been revised to incorporate an expanded definition of high tech services.

### Are all high tech companies included?

It is recognized that there are some drawbacks to the industry-based definition employed here. The first is that the NAICS does not fully recognize industries of the "new economy." As a result, new products and services are often grouped in an industry that primarily produces similar but distinctly different products and services.

Second, it is difficult to capture the full breadth of high technology or knowledge-intensive activity in the economy through NAICS-based definitions. Innovation is not unique to a specific group of industries, but can be found throughout the whole economy. Some firms on the "leading edge" will be missed if they are classified in industries that, in aggregate, fail to show high tech characteristics.

---

[18] Platzer, M., Novak, C.A. and Kazmierczak, M.F. (February 2003). *Defining the High-Tech Industry*. American Electronics Association.

E. Wayne Clendenning & Associates (May 2000). *Comparison and Reconciliation of SIC and NAICS Industry Codes Used to Define Knowledge-Based Industries (KBIs)*. Industry Canada.

On the other hand, it is impossible to remove those firms in the industries in the sector that lag behind the industry norm.

The industries included in the definition adopted for this profile represent the core of the high technology sector. While it is certainly true that examples of creativity and innovation can be found in every industry, this definition, with its industry focus, includes only those industries where high technology activity is concentrated.

## Exactly which industries are included?

The table below lists the industries that are defined, for the purpose of this report, to constitute the high technology sector.

### Industries in the High Technology Sector

| NAICS | Industry |
|---|---|
| **Manufacturing Industries** | |
| 325189 | Other Inorganic Chemicals |
| 325410 | Pharmaceutical and Medicine |
| 333310 | Commercial and Service Industry |
| 334110 | Computer and Peripheral |
| 334210 | Telephone Apparatus |
| 334220 | Radio, Television Broadcasting & Wireless Communications Equipment |
| 334290 | Other Communications Equipment |
| 334310 | Audio and Video Equipment |
| 334410 | Semiconductor and Other Electronic Components |
| 334511 | Navigational and Guidance Instruments |
| 334512 | Measuring, Medical and Controlling Devices |
| 334610 | Manufacturing and Reproducing Magnetic and Optical Media |
| 335315 | Switchgear and Switchboard, and Relay and Industrial Control Apparatus |
| 335920 | Communication and Energy Wire and Cable |
| 335990 | All Other Electrical Equipment and Component |
| 336410 | Aerospace Products and Parts |
| 339110 | Medical Equipment and Supplies |
| **Service Industries** | |
| 511210 | Software Publishers |
| 512110 | Motion Picture and Video Production |
| 512190 | Post-Production and Other Motion Picture and Video Industries |
| 515210 | Pay and Specialty Television |
| 516110 | Internet Publishing and Broadcasting |
| 517110 | Wired Telecommunications Carriers |
| 517210 | Wireless Telecommunications Carriers (Except Satellite) |
| 517310 | Telecommunications Resellers |
| 517410 | Satellite Telecommunications |
| 517510 | Cable and Other Program Distribution |
| 517910 | Other Telecommunications |
| 518111 | Internet Service Providers |
| 518112 | Web Search Portals |
| 518210 | Data Processing, Hosting and Related |
| 541330 | Engineering |
| 541360 | Geophysical Surveying and Mapping Services |
| 541370 | Surveying and Mapping (Except Geophysical) Services |
| 541380 | Testing Laboratories |
| 541510 | Computer Systems Design and Related |
| 541620 | Environmental Consulting |
| 541690 | Other Scientific and Technical Consulting |
| 541710 | Research and Development in Physical, Engineering and Life Sciences |

**Shading indicates industries added to high tech definition with this edition of the *Profile***

Note: For the purposes of this report, the manufacturing NAICS industries are grouped together as "Manufacturing." For services, Engineering (541330) is reported as a separate industry. The other industries are aggregated into groups to maintain confidentiality requirements and still allow for some detailed reporting. Computer and Related Services includes 511210, 516110, the 518 NAICS codes and 541510. The remaining 541 NAICS codes are grouped into a category called "Other Services." The 517 NAICS codes and 515210 are covered under a single "Telecommunications and Related" classification and 512110 and 512190 are grouped under "Motion Picture Production and Post Production."

## High Technology Industries

### Manufacturing

*325189 Other Inorganic Chemicals* Comprises establishments engaged in the manufacture of high tech inorganic chemicals such as enriched uranium and radioactive isotopes.

*325410 Pharmaceuticals and Medicine* Consists of firms engaged in the manufacture of drugs, medicines and related products for human or animal use, including cutting edge products developed through considerable research efforts.

*333310 Commercial and Service Industry Machinery* Contains establishments that manufacture machinery for use in commercial and service industries, including high tech optical instruments and photographic equipment.

*334110 Computers and Peripheral Equipment* Comprises establishments primarily engaged in the manufacture of computers and peripheral computer equipment such as storage devices, CD-ROM and DVD drives, optical readers and scanners, etc.

*334210 Telephone Apparatus* Contains firms that manufacture wired telephone and data communications equipment, including cordless telephones, facsimile equipment, local area network (LAN) equipment, etc.

*334220 Radio and Television Broadcasting and Wireless Communications Equipment* Consists of firms primarily engaged in manufacturing radio and television broadcast and wireless communication equipment, including satellites, GPS (global positioning system) and pagers.

*334290 Other Communications Equipment* Comprises establishments engaged in the manufacture of other types of communications equipment, such as traffic signals, fire detection and alarm systems, remote control units, intercom systems, etc.

*334310 Audio and Visual Equipment* Establishments engaged in manufacturing electronic audio and video equipment such as compact disc and DVD players, televisions, etc.

*334410 Semiconductor and Other Electronic Components* Consists of firms engaged in the manufacture of semiconductor devices and other electronic components such as circuit boards, microprocessor chips and other computer parts, fibre-optic connectors, etc.

*334511 Navigational and Guidance Instruments* Comprises establishments primarily engaged in navigational and guidance instruments such as air traffic control radar systems, sonar, etc.

*334512 Measuring, Medical and Controlling Devices* Establishments engaged mainly in the manufacturing equipment such as high tech medical devices, laboratory analytical and testing instruments, industrial process control instruments, etc.

*334610 Manufacturing and Reproducing Magnetic and Optical Media* Contains establishments primarily engaged in manufacturing magnetic and optical media such as compact discs, computer software, etc.

*335315 Switchgear and Switchboard, and Relay and Industrial Control Apparatus* Comprises establishments engaged in manufacturing electrical switchgear and protective equipment, including high tech switching devices.

*335920 Communication and Energy Wire and Cable* Consists of firms engaged in the manufacture of communications and energy wire and cable such as high tech fibre-optic cable.

*335990 All Other Electrical Equipment and Components* Comprises establishments engaged in manufacturing electrical equipment and components, including fuel cells.

*336410 Aerospace Products and Parts* Establishments engaged in manufacturing aircraft, missiles, space vehicles, etc.

*339110 Medical Equipment and Supplies* Contains firms that manufacture medical equipment and supplies including high tech laboratory and dental equipment.

**Services**

*511210 Software Publishers* Establishments engaged in producing and distributing computer software.

*512110 Motion Picture and Video Production* Comprises firms engaged in producing motion pictures, videos, television programs and commercials.

*512190 Post-Production and Other Motion Picture and Video Industries* Consists of establishments engaged in providing post-

production services and services to the motion picture and video industries, including high tech special effects and animation.

*515210 **Pay and Specialty Television*** Establishments engaged in broadcasting television programs on specialty cable networks, pay television or satellite networks.

*516110 **Internet Publishing and Broadcasting*** Comprises firms primarily engaged in publishing and/or broadcasting content on the Internet.

*517110 **Wired Telecommunications Carriers*** Consists of establishments engaged in operating and maintaining network facilities for the transmission of voice, data, text, sound and video.

*517210 **Wireless Telecommunications Carriers (Except Satellite)*** Comprises establishments engaged in operating and maintaining switching and transmission facilities to provide direct communications via the airwaves.

*517310 **Telecommunications Resellers*** Establishments that resell telecommunications services purchased from operators of telecommunications networks.

*517410 **Satellite Telecommunications*** Contains firms engaged in operating and maintaining satellite telecommunications facilities.

*517510 **Cable and Other Program Distribution*** Establishments engaged in distributing television and radio programs via cable or satellite distribution systems.

*517910 **Other Telecommunications*** Comprises establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking and telemetry, and radar station operation.

*518111 **Internet Service Providers*** Establishments that provide Internet services such as access to the Internet, web hosting and consulting related to Internet connectivity.

*518112 **Web Search Portals*** Comprises establishments engaged in operating web search portals.

*518210 **Data Processing, Hosting and Related*** Consists of firms engaged in providing hosting or data processing services.

*541330 **Engineering*** Comprises establishments engaged in engineering activities in design, development and utilization of machines, instruments, systems, etc.

*541360 **Geophysical Surveying and Mapping Services*** Establishments engaged in gathering, interpreting and mapping geophysical data.

*541370 **Surveying and Mapping (Except Geophysical) Services*** Contains firms engaged in providing surveying and mapping services of the surface of the earth, including the sea floor.

*541380 **Testing Laboratories*** Consists of establishments engaged in providing physical, chemical and other analytical testing services.

*541510 **Computer Systems Design and Related*** Establishments that provide expertise in the field of information technologies through writing and supporting computer software, and computer systems design and maintenance.

*541620 **Environmental Consulting*** Comprises establishments primarily engaged in providing consulting services on environmental issues using a staff of scientists, engineers and other technicians.

*541690 **Other Scientific and Technical Consulting*** Consists of firms engaged in providing advice and assistance on scientific and technical issues (other than environmental issues).

*541710 **Research and Development in Physical, Engineering and Life Sciences*** Establishments engaged in research and experimental development in areas such as biotechnology, computers, physics, mathematics, etc.

# Appendix B:
# Defining High Technology Commodities

## Defining high technology commodities

Developing a definitive list of what commodities should be considered high technology is a difficult exercise. Leading technologies are continually evolving and what is considered high technology today may be classified as low tech tomorrow. As a result, the definition of high technology commodities must necessarily change over time. This means that data regarding high technology trade from 1994 may contain commodities that are no longer included in the 2004 definition. However, this does not mean that this data cannot be compared over time. It is still valid to look at growth rates over that period as long as it is clear that the rates represent growth in the changing definition of high technology, rather than a static basket of goods.[17]

The commodity list used by BC STATS to define high technology goods is based on the US Bureau of the Census' advanced technology products (ATP) list.[18] The list of American commodity codes was matched against the equivalent Canadian codes. In many cases the codes matched exactly and no further effort needed to be expended. However, in other cases there was not an exact match, particularly for exports, which are coded to only eight digits. For these commodity groups, further analysis was undertaken using available data from the US Bureau of the Census and Statistics Canada to determine whether or not the majority of these codes were high technology (as defined by the ATP list). If it was judged that this was not the case, the commodity was excluded from the high tech definition. While this may result in some high technology products being excluded from the definition, it should be balanced to some extent by those commodity classifications that, although they are mainly high technology, still include some "low tech" goods. Since

[17] One technical limitation that may cause difficulty in temporal comparisons is when there are changes to the definition of Harmonized System codes. When this occurs, there may be a resulting unintended change to the high technology commodity definition. This is due to the fact that the code may now include or exclude commodities that it did not previously, such that these goods can no longer be separated out (or perhaps can be more finely defined, so that low technology commodities that previously had to be included can now be expunged from the definition). However, these changes are usually small and should not have a significant impact on the data.

[18] For a discussion of the development and content of this list, see: McGuckin, R. H., Abbott, T. A., Herrick, P. and Norfolk, L. (1991). *Measuring Advanced-Technology Products Trade: A New Approach.* US Bureau of the Census.

the ATP list itself is defined using classification codes, this kind of trade-off is already present in the definition. No exact measure of high technology trade is possible to achieve since high technology is subjective to begin with, but this definition should be in line with what most people would agree is high technology.

Note that a commodity need not be produced by one of the industries included in the industry-based high technology definition in order to be considered a high technology product. Some industries not included in the high tech definition, because they mainly manufacture low technology goods, may also manufacture some high technology products. Conversely, it is possible for those industries classified as high technology to also manufacture some products that are considered low tech.

### Calculating BC consumed imports

At this time, Statistics Canada does not produce data on imports by province of consumption, rather, only by province of clearance. An estimate of BC consumed imports was derived using the consumption of Canadian imports of those commodities by the BC economy and applying this ratio to total Canadian imports.

### Data source

Data for trade in goods are supplied by Statistics Canada and are provided through the Trade Research and Inquiry Package (TRIP) computer reporting system at BC STATS. TRIP offers user-defined tabulations of export or import statistics for British Columbia, Canada, the United States and other countries. Tabulations can include information on commodities, countries, US states, years, months, mode of transport, etc.

### Commodity groups

The US Bureau of the Census has defined ten fields involving advanced or high technology commodities. Each field represents a large number of products and processes that are considered to be on the leading edge. These fields have been used to classify exports and imports in this report.

***Aerospace*** Technological developments in this field include advances that allow planes to fly further, faster, higher, to use less fuel and to have quieter engines. Many of the advances have been adapted to military applications, such as vertical take-off aircraft and aircraft that require shorter distances for takeoff and landings.

***Biotechnology*** Biotechnology covers recent developments in recombinant deoxyribonucleic acid (DNA) research and genetic engineering. Obvious examples include drugs, enzymes and other therapeutic items. Common applications include agricultural production and the use of microorganisms for the production of drugs and other complex molecules.

***Computer and Telecommunications*** This field covers technological advances affecting both computers and telecommunications hardware products. The primary advances in this field are in developing hardware that can process information more quickly. Important breakthroughs are expected in the areas of artificial intelligence and parallel processing.

***Computer Integrated Manufacturing*** This field includes developments in robotics and numerically con-trolled (NC) machines. These products have a significant impact on industrial automation. Robots and NC machines perform increasingly sophisticated operations through developments in sensory and visual capabilities of machines. With these breakthroughs, the manufacturing processes have increased in flexibility and require less human intervention to operate and maintain production machinery. Many of the new automation technologies are made possible because of breakthroughs in the application and development of faster, smaller components.

***Electronics*** The miniaturization of electronic components is the most important recent technological advance in the field of electronics. Some technologies included are integrated circuits, semiconductors, such as transistors and diodes, as well as new developments in surface mounting of electronic components such as capacitors and resistors.

***Life Sciences (Medical)*** This field encompasses the application of scientific advances to medical sciences. Recent advances such as nuclear resonance imaging, echo cardio-graphs and total-patient monitoring systems are examples of products developed from recent technological advances in this field. Also, recent increases in the strength of materials and reductions in their weight have led to improved internally implemented fixation devices and prostheses.

***Materials Design*** Materials design includes the newest methods of production for products that already exist in the market as well as the development of new products. Recent examples of technological advancements include high temperature superconductors, advanced polymers that expand the areas of plastic use and new ultra

clear glass that allows fibre optic cable to be used for long distance communication.

***Nuclear Technology*** This field covers developments in nuclear power production and primary nuclear reactors. It includes newly designed reactor components that improve the safety and efficiency of nuclear power plants. It also includes developments in the creation and packaging of nuclear fuel, the application of atomic physics to medical and other areas of science.

***Opto-Electronics*** Opto-electronics is generally defined as the expanded development and application of the laser. Also included are recent advances in photoelectric cells and diodes, photographic and other imaging equipment, and fibre-optic cables.

***Weapons*** This field covers all advanced methods used for the development, guidance, and control of weapons intended for national or personal protection and deterrence. Many of the developments in this area are the result of breakthroughs in computers and telecommunications as well as aerospace technologies.